

# **Chapter 2. Responses to Comments**

---

## **California Environmental Quality Act**

### **Public Review**

The California Environmental Quality Act (CEQA) requires that a draft EIR be made available for public review for a period of at least 45 days. In accordance with this requirement, copies of the revised draft PEIR were sent to the State Clearinghouse for circulation to affected state agencies, were provided to local agencies, and were made available to the public from February 2, 2004, to March 17, 2004.

In addition, the SWRCB held a workshop in Sacramento on March 2, 2004, to receive public comment on draft PEIR.

### **Final EIR**

As the lead agency for the project, the SWRCB must prepare and certify a final EIR before it may take action on the proposed GO. The final EIR must contain:

- the comments received during the review period;
- a list of the agencies, organizations, and individuals who submitted comments on the draft EIR during the review period;
- the SWRCB's written responses to the significant environmental points raised in comments received during the review process; and
- revisions to the draft EIR that were made in response to the comments.

## **Comments Received**

A total of 53 comments were received during the public review period. The commenters are listed below, in alphabetical order. For convenience purposes, the comments are organized by whether they were received from a public agency or from an individual or

group. This categorization in no way affects the consideration given to each of the comments.

The comments in letters L7 to L39, NGO5 and NGO6, and I1 to I5 are addressed by Master Response #7, which is described below. Copies of these letters are placed at the end of this chapter. The remaining letters are placed following the respective sets of responses under “Responses to Individual Comments.”

**Table 2-1. List of Commenters and Comment Letter Codes**

| <b>Commenter</b>  | <b>Comment Letter Code</b> |
|---|----------------------------|
| <b>Public Agencies</b>                                      |                            |
| Association of Metropolitan Sewerage Agencies               | L10                        |
| Bay Area Clean Water Agencies                               | L11                        |
| California Association of Sanitation Agencies               | L8                         |
| California Department of Conservation                       | S2                         |
| California Department of Health Services                    | S1                         |
| Camarillo Sanitary District                                 | L12                        |
| Central Delta Water Agency (by Dante John Nomellini)        | L1                         |
| Central Marin Sanitation Agency                             | L13                        |
| City of Los Angeles Bureau of Sanitation                    | L14                        |
| City of Rio Vista   | L3                         |
| City of Riverside Public Works Department                   | L16                        |
| City of San Jose Environmental Services Department          | L31                        |
| City of Tehachapi Planning Commission (by Marti Sprinkle)   | L5                         |
| County of Riverside Department of Environmental Health      | L4                         |
| County Sanitation Districts of Los Angeles County           | L7                         |
| County of Sonoma Department of Health Services              | L17                        |
| Delta Diablo Sanitation District                            | L18                        |
| Delta Protection Commission                                 | L6                         |
| Dublin San Ramon Services District                          | L19                        |
| East Bay Municipal Utility District                         | L20                        |
| Elsinore Valley Municipal Water District                    | L21                        |
| Encina Wastewater Authority                                 | L22                        |
| Fairfield-Suisun Sewer District                             | L23                        |
| Inland Empire Utilities Agency (a municipal water district) | L24                        |
| Kern County (by Michael Hogan of Hogan Guiney Dick, LLP)    | L2                         |
| Las Virgenes Municipal Water District                       | L25                        |
| Mountain View Sanitary District                             | L26                        |
| North of River Sanitary District No. 1                      | L27                        |

| Commenter  | Comment Letter Code |
|--|---------------------|
| Orange County Sanitation District                              | L28                 |
| Rancho California Water District                               | L29                 |
| Sacramento Regional County Sanitation District                 | L30                 |
| San Francisco Public Utilities Commission                      | L33                 |
| Sewerage Agency of Southern Marin                              | L15                 |
| South Bayside System Authority                                 | L34                 |
| South Orange County Wastewater Authority                       | L35                 |
| Southern California Alliance of Publicly Owned Treatment Works | L32                 |
| Susanville Consolidated Sanitary District                      | L36                 |
| TriTAC   | L9                  |
| Union Sanitary District  | L37                 |
| U.S. Environmental Protection Agency, Region IX                | F1                  |
| Ventura Regional Sanitation District                           | L38                 |
| West County Agency   | L39                 |
| <b>Individuals and Groups</b>                                  |                     |
| Ian Anderson   | I3                  |
| California Farm Bureau Federation                              | NGO2                |
| California Water Environment Association                       | NGO5                |
| Dennis Fox   | I1                  |
| Kern Food Growers Against Sewage Sludge                        | NGO1                |
| R. Emigh Livestock   | I2                  |
| Responsible Biosolids Management, Inc.                         | I4                  |
| Riverside County Farm Bureau                                   | NGO6                |
| Solano Citizens Against B!S!                                   | NGO4                |
| Synagro Technologies, Inc.                                     | I5                  |
| Western Growers  | NGO3                |

## Responses

CEQA and the State CEQA Guidelines require that a final EIR contain well-reasoned responses to comments that raise environmental issues. The following responses are organized by comment letter. A copy of each letter precedes the matching response. Each comment letter has been broken down into individual comments, as identified in the margins of the letter. The written responses are numbered to correspond to each letter's individual comments.

If a comment resulted in a revision to the PEIR, that revision is shown in Chapter 3 as an excerpt of the draft PEIR text. Additions to the text are shown in bold print; deletions are shown in strikeout.

## Master Responses

### Master Response #1: Health Risk of Biosolids Under the Part 503 Rule

The Part 503 Rule was enacted by the U.S. Environmental Protection Agency (U.S. EPA) in 1993 after a 9-year period of research. While the Part 503 Rule cannot guarantee absolute absence of health risk, it is based in science and is subject to continuous review. As part of this review, the U.S. EPA responded to the July 2002 report of the National Research Council (NRC) and March 2002 status report by the U.S. EPA Office of Inspector General (OIG) by undertaking a number of new initiatives.

In July 2002, the NRC within the National Academy of Sciences (NAS) released *Biosolids Applied to Land: Advancing Standards and Practices*, a report on the U.S. EPA's regulatory requirements for applying biosolids to land. The report was the result of a 2001 request from the U.S. EPA for a comprehensive review of its approach. The NRC was asked to perform the following tasks:

- review the risk assessment methods and data used to establish concentration limits for chemical pollutants in biosolids to determine whether they are the most appropriate approaches;
- review the current standards for pathogen elimination in biosolids and their adequacy for protecting human health; and
- explore whether approaches to conducting pathogen risk assessment can be integrated with those for chemical risk assessment.

Although *Biosolids Applied to Land* identifies numerous areas where additional study and EPA oversight are warranted, its fundamental conclusion is that “[t]here is no documented scientific evidence that the Part 503 rule has failed to protect public health” (*Biosolids Applied to Land*, page 3). This conclusion was based on the NRC committee's review of available scientific literature.

In order to ensure the safety of biosolids over the long-term, the NRC offered some 60 specific recommendations for action by the U.S. EPA. *Biosolids Applied to Land* recommends that the U.S. EPA support additional studies of populations exposed to biosolids for the purpose of determining whether a previously unrecognized health risk does indeed exist, undertake the periodic assessment of the components of biosolids and

their potential risks, and undertake to reassess the chemical and pathogen standards established in 1993. In general, these recommendations were intended to take advantage of the scientific advances that have taken place since 1993 when the Part 503 rule was adopted. They also addressed the need for the U.S. EPA to devote additional resources to enforcement of the existing regulations. There is a discussion of *Biosolids Applied to Land* at the beginning of Chapter 5 of the PEIR.

The U.S. EPA issued its final response to the NRC report in December 2003, as discussed in Chapter 5 of the draft PEIR. The U.S. EPA's final action plan for the NRC recommendations includes a number of prioritized projects (summarized on page 5-3 of the draft PEIR), including biosolids field studies, a targeted national study of potential pollutants in biosolids, and participation in an incident-tracking workshop. The U.S. EPA also conducted screening analyses of a list of 803 chemical pollutants, selecting 15 for which it will undertake a more refined risk assessment and risk characterization process. The results will assist the U.S. EPA in determining whether to propose new amendments to the biosolids regulations. In a related action, U.S. EPA has entered into an agreement with the federal Centers for Disease Control to review the available information on reported human health effects from the land application of biosolids to determine whether additional investigation is necessary.

As discussed in Chapter 5 of the revised PEIR, the U.S. EPA OIG issued a report entitled *Land Application of Biosolids* in March 2002 in response to a series of allegations submitted by the National Whistleblower Center of shortcomings in the Part 503 Rules and how they were being applied. *Land Application of Biosolids* was a status report on the U.S. EPA's land application regulations and did not contain any recommendations for action. By its own terms, it was not intended to be either an audit or an evaluation of U.S. EPA's activities. Based on the allegations, the report made the following basic findings of broad applicability:

- U.S. EPA and State Biosolids Program Staff. The U.S. EPA had reduced the number of staff assigned to the biosolids program and the states' staffing of biosolids programs varied significantly;
- Delegation of Biosolids Programs to States. Although the Clean Water Act (CWA) authorizes U.S. EPA to delegate administration of the biosolids program to the individual states, only five states had been granted formal delegation and therefore the U.S. EPA cannot be certain that residents in non-delegated states are provided the same level of protection as in the Federal program;
- Responding to and Tracking Health Complaints. Of 21 complaints related to sludge exposure that the National Whistleblower Center alleged the U.S. EPA had failed to investigate, 14 had been investigated by state or federal officials, 5 were not reported to state or federal officials, and 2 were not biosolids related;
- Risk Assessment and Pathogen Testing Concerns. There are indications that more research on pathogen testing is needed to address risk assessment uncertainties. At the time, the U.S. EPA did not plan to undertake further risk assessment.

- EPA's Relationship with a Professional Association. The money which U.S. EPA provided to the Water Environment Federation was largely Congressionally mandated and U.S. EPA had no discretion in awarding the funds.
- Public Acceptance Concerns. Despite regulatory safeguards, public acceptance of the use of biosolids is mixed and a number of counties and cities have banned or restricted land application.

Under the CWA, U.S. EPA must establish regulations that identify "uses for biosolids. The CWA calls for two rounds of regulation. The U.S. EPA issued the first rule in February 1993 (i.e., the Part 503 regulations). This allowed for land application, surface disposal, and incineration in sewage sludge incinerators and established requirements applicable to each of those use and disposal methods for eleven metals and total hydrocarbons.

In late December 1999, the U.S. EPA proposed a second rule for use and disposal of sewage sludge containing chlorinated dibenzo-p-dioxin, chlorinated dibenzofurans, and co-planar polychlorinated biphenyls (i.e., dioxins). The proposed rule included a numeric limit of 300 parts per trillion (ppt) toxic equivalents for dioxins in sewage sludge applied to the land as well as monitoring, record keeping, and reporting requirements. After 5 years of study, including outside peer review, the U.S. EPA determined that dioxins in biosolids do not pose a significant risk to human health or the environment.

The U.S. EPA's 2001 Dioxins Update to the 1988 *National Sewage Sludge Survey* indicates that dioxin levels in treated sewage sludge have declined since 1988. This downward trend is expected to continue as regulatory controls are placed on additional sources of dioxins in the environment, particularly on some combustion practices. Dioxins are a group of highly toxic persistent compounds that are a byproduct of certain combustion and chemical manufacturing processes. Sewage sludge is the byproduct of the treatment processes, which purify wastewater before it is released into local waterways.

The most highly exposed people, theoretically, are those people who apply sewage sludge as a fertilizer to their crops and animal feed and then consume their own crops and meat products over their entire lifetimes. U.S. EPA's analysis shows that even for this theoretical population, only 0.003 new cases of cancer could be expected each year or only 0.22 new cases of cancer could be expected over a span of 70 years. The risk to people in the general population of new cancer cases resulting from dioxin in sewage sludge is even smaller due to lower exposures than the hypothetical, highly exposed farm family which U.S. EPA modeled.

The Center for Food Safety, on behalf of itself and other organizations, filed a petition with the U.S. EPA in early October 2003 requesting an emergency moratorium on the land application of "sewage sludge." More specifically, it asked for an immediate freeze on the issuance of National Pollution Discharge Elimination System (NPDES) permits and revision of existing issued NPDES permits for application of biosolids to land. The petition also asked the U.S. EPA to begin a rulemaking to eliminate the land application of biosolids as an acceptable practice.

As discussed in Executive Summary of the Statewide PEIR, the U.S. EPA found that the claims made in support of the petition were not substantiated. Further, the U.S. EPA found its decision not to ban the land application of biosolids to be consistent with the findings of the NRC in its 2002 *Biosolids Applied to Land* report, that there is no documented scientific evidence that the Part 503 regulations have failed to protect human health, although more research is necessary to fill information gaps and address public uncertainty. The U.S. EPA noted that it will be undertaking additional research in response to the recommendations in *Biosolids Applied to Land*. On December 24, 2003, the U.S. EPA issued a letter to the Center for Food Safety dismissing the petition.

In conclusion, the SWRCB is satisfied that there is substantial evidence that the land application of biosolids, as regulated under Part 503 and under the additional restrictions contained in the proposed GO, would not constitute an unreasonable health risk.

## Master Response #2: Level of Detail in Alternatives Analysis

CEQA does not require an EIR to analyze the selected range of alternatives at the same level of detail as the proposed project. State CEQA Guidelines Section 15126.6(d) provides that, in evaluating the impacts of the alternatives:

The EIR shall include sufficient information about each alternative to allow meaningful evaluation, analysis, and comparison with the proposed project. A matrix displaying the major characteristics and significant environmental effects of each alternative may be used to summarize the comparison. If an alternative would cause one or more significant effects in addition to those that would be caused by the project as proposed, the significant effects of the alternative shall be discussed, but in less detail than the significant effects of the project as proposed. (*County of Inyo v. City of Los Angeles* (1981) 124 Cal.App.3d 1).

Furthermore, the PEIR is not required to contain intensive detail, for the simple reason that specific results of the proposed project are not known. As a statewide regulation, the GO will be applied to individual projects of unknown size, at unknown locations, and in an unknown number of circumstances. Therefore, the analysis of impacts must be general, not site-specific, in nature. The decision in *Al Larson Boat Shop v. Board of Harbor Commissioners* (1993) 18 Cal.App.4<sup>th</sup> 729 made this point clearly:

No ironclad rules can be imposed regarding the level of detail required in the consideration of alternatives. EIR requirements must be "sufficiently flexible to encompass vastly different projects with varying levels of specificity" (*Rio Vista Farm Bureau Center v. County of Solano* (1992) 5 Cal.App.4<sup>th</sup> 351, 374, 7 Cal.Rptr.2d 307). The degree of specificity required in an EIR "will correspond to the degree of specificity involved in the underlying activity which is described in the EIR" (Guidelines, s 15146). Thus, "an EIR on the adoption of a general plan ... must focus on secondary effects of adoption, but need not be as precise as an EIR on the specific projects which might follow [Citations]" (*Rio Vista*, supra, 5 Cal.App.4<sup>th</sup> at p. 374, 7 Cal.Rptr.2d 307).

Accordingly, the analysis of the project alternatives will be general in nature. Precise analysis is not possible in light of the unknown variables that may occur in the implementation of the GO. These variables include, but are not limited to: specific budgetary constraints of the publicly owned treatment works (POTWs) and their effect on individual reuse/disposal choices, including type of biosolids treatment, location of treatment facilities, and location of land application sites; linked points of origin and destination; individual landfill operator choice of ADC material and acceptance of biosolids for disposal; and local opposition to new landfills or biosolids disposal facilities.

Precise analysis of the alternatives is not necessary in order to provide a meaningful general analysis and comparison of their impacts. In fact, a more detailed analysis would require speculation about the particular extent and location of future beneficial uses of biosolids.

### **Master Response #3: Selection and Discussion of the “Environmentally Superior” Alternative**

The revised Statewide PEIR includes a reasonable range of potentially feasible alternatives to the proposed GO. This includes the “Class A Only” and “Food Crop Limitation” alternatives. The State CEQA Guidelines require that the lead agency discuss potentially feasible alternatives to the project in sufficient detail to allow a meaningful comparison and, to identify the “environmentally superior” alternative from among those alternatives.

State CEQA Guidelines Section 15126.6(d) states:

The EIR shall include sufficient information about each alternative to allow meaningful evaluation, analysis, and comparison with the proposed project. A matrix displaying the major characteristics and significant environmental effects of each alternative may be used to summarize the comparison. If an alternative would cause one or more significant effects in addition to those that would be caused by the project as proposed, the significant effects of the alternative shall be discussed, but in less detail than the significant effects of the project as proposed. (*County of Inyo v. City of Los Angeles* (1981) 124 Cal.App.3d 1).

Inherent in the idea of providing a meaningful comparison is identification of those aspects of the alternatives that may have greater or lesser environmental impacts than the project.

Selection of one of the alternatives as the environmentally superior alternative does not imply that the other alternatives are infeasible. It simply serves to identify that alternative which, taking the various impacts into account, would seem to have the least environmental impact. Nothing in CEQA or the State CEQA Guidelines requires the lead agency to adopt the environmentally superior alternative.

CEQA provides that no project may be approved which would have significant unavoidable effects on the environment if there are potentially feasible alternatives to that project, unless specific economic, social, or other conditions make infeasible such project alternatives (Public Resources Code Section 21002). The SWRCB will make findings regarding the feasibility of the alternatives upon approving the project. These findings will explain the agency's reasons for selecting a project over other alternatives (State CEQA Guidelines Section 15091). Until such findings are made, the SWRCB has not set aside or otherwise disqualified any of the five alternatives discussed in the PEIR.

The "Modified GO" alternative was identified as the environmentally superior alternative. As discussed in the Executive Summary of the revised PEIR, the Modified GO alternative would be expected to have less severe impacts on truck traffic, air quality, and energy use than either of the Class A Only or Food Crop Limitation Alternatives.

The combining of the Class A Only and Food Crop Limitation Alternatives has also been examined, in response to a comment received during the review period. As discussed in Master Response #4, the combined alternatives would have essentially the same impacts as the Class A Only Alternative.

In light of information received during the review period of the revised PEIR, the SWRCB has revised the traffic and air quality analyses for the Class A Only and Food Crop Limitation Alternatives in Chapter 14 of the final PEIR. The results are that the Modified General Order has a lesser impact on traffic and air quality and would therefore be the Environmentally Superior Alternative.

### **Master Response #4: Selection of the Class A Only and Food Crop Limitation Alternatives Simultaneously**

The adoption of both the Class A Only and Food Crop Limitation Alternatives together would result in a GO that is limited to the land application of Class A biosolids on non-food crops. The combined alternatives would be assumed to include the non-pathogen related measures identified for each of these alternatives.

The resultant combined alternatives would be similar to the Class A Only Alternative in effectiveness. Further restricting the Class A Only Alternative by eliminating application to food crops, as suggested by the comment, would result in little or no additional reduction in impacts. As discussed in Chapter 2 of the revised PEIR, Class A biosolids differ from the Class B biosolids that are addressed in the proposed GO in that Class A treatment greatly reduces the viability of pathogens in the biosolids. As a result, Class A biosolids may be applied to agricultural land pursuant to Part 503 without restrictions on the time of harvest or on public access to the application site. The primary reason for limiting the application of Class B biosolids to food crops (as set out in the Food Crop Limitation Alternative) is to avoid the possibility of the spread of pathogens through improper application, unauthorized access to application sites, or premature harvest of crops. Therefore, the two alternatives have much the same effect in reducing the impacts

of the proposed GO and combining them would produce little, if any, additional reduction.

Adoption of the combined alternatives GO would not preclude the state's nine RWQCBs from considering individual waste discharge requirements (WDRs) for Class B biosolids application. The individual permits would be subject to conditions of approval specific to the situation on the ground.

For comparison purposes, the following discusses the feasibility and impacts of the suggested combined alternatives in comparison to the proposed GO.

The combined alternatives would meet the project objectives, as described in Chapter 2 of the revised PEIR. Each of the component alternatives that would make up the combined alternatives is potentially feasible; so, the combination should be potentially feasible as well. Adopting these two alternatives simultaneously would reduce the potential for the unintended or accidental release of pathogens either through direct contact with humans or through entry into the human food chain in comparison to the proposed project. Similar to the two alternatives individually, this would reduce a potential impact of the proposed GO, albeit an impact that has not been identified as being significant.

The combined alternatives would result in the following impacts in comparison to the proposed GO (without the mitigation measures that have been identified in the SEIR):

- **Soils, Hydrology and Water Quality** – The combined alternatives would result in similar impacts to soils as the proposed GO because Class A biosolids have much the same beneficial effects on soil quality as Class B biosolids. Both Class A and Class B biosolids are required by federal law to be applied at agronomic levels and in limited amounts to avoid toxic metals contamination over time. With regard to hydrology and water quality, the impact of the combined alternatives would be lesser than the proposed GO, because the exclusive use of Class A biosolids would avoid the potential for pathogens to enter surface water through the improper application of biosolids.
- **Land Productivity** – The combined alternative would result in similar impacts to the proposed GO because Class A and Class B biosolids offer similar benefits to soil quality and land productivity.
- **Public Health** – While both the proposed GO and the combined alternatives would be protective of public health, the combined alternatives would reduce the risk of exposure to pathogens through either unauthorized entry on lands to which biosolids have been applied, improper application of biosolids, or improper timing of harvest of food crops to which biosolids have been applied. This is because Class A biosolids have essentially no viable pathogens at the time of their application to land. No delay is necessary between the time of their application and the harvest of food crops in order to reduce the viability of pathogens within the biosolids.

- Land Use and Aesthetics – The combined alternatives would incorporate mitigating, non-pathogen related features that would reduce impacts on visual quality to a less-than-significant level. Overall, the impact of this alternative would be less severe than the proposed GO.
- Biological Resources – The combined alternatives would incorporate mitigating, non-pathogen related features that would reduce biological impacts to a less-than-significant level. Furthermore, this alternative would avoid the potential for pathogen releases through improper application of biosolids by limiting biosolids to Class A. Overall, the impact of the combined alternatives would be less severe than the proposed GO.
- Fish – The combined alternatives would incorporate mitigating, non-pathogen related features that would reduce impacts to fish to a less-than-significant level. Additionally, the combined alternatives would avoid the potential for pathogen releases through improper application of biosolids and any impact on fish that might result. The impact of the combined alternatives would be less severe than the proposed GO.
- Traffic – The combined alternatives would have a similar impact to that described for the Class A Only Alternative because the combination would similarly discourage the application of Class B biosolids in California. As described in Chapter 14 of the revised PEIR, the impact would be more severe than under the proposed GO.
- Air Quality – The combined alternatives would have a similar impact to that described for the Class A Only Alternative; that is, an incremental increase in transportation emissions. As described in Chapter 14 of the revised PEIR, the impact would be more severe than under the proposed GO.
- Noise – Primary noise impacts would result from transportation. The combined alternatives would incorporate mitigating features that would reduce noise impacts on sensitive receptors to a less-than-significant level. As a result, the combined alternatives would have a less severe impact than the proposed GO.
- Cultural Resources – The combined alternatives would incorporate mitigating, non-pathogen related features that would reduce impacts on cultural resources to a less-than-significant level. The impact of this alternative would be less severe than the proposed GO.
- Cumulative Impacts – The combined alternatives would make contributions to cumulative traffic, air quality, and energy consumption impacts similar to the Class A Only Alternative. By discouraging the land application of Class B biosolids, traffic to transport Class B biosolids elsewhere is expected to increase, air emissions would increase as a result of additional truck traffic, and to the extent that the volume of Class A biosolids treatment increases, energy consumption will be increased.

State CEQA Guidelines Section 15088.5 requires the recirculation of an EIR when a new potentially feasible alternative is identified as part of the public review that is

“considerably different from others previously analyzed [and] would clearly lessen the significant environmental impacts of the project.” As proposed by the comment, combining the two alternatives, while potentially feasible, is not considerably different from the Class A Only Alternative. Therefore, no recirculation of the EIR is necessary.

### **Master Response #5: Scope of the Program EIR**

The PEIR for the proposed GO has been revised in response to the Court of Appeal’s 2003 decision in *County of Kern, et al. v. State Water Resources Control Board, et al.* After reviewing the PEIR that the SWRCB certified in 1999 for its approval of the biosolids GO, the court found that in selecting a range of alternatives to analyze in the PEIR, the SWRCB had incorrectly eliminated the Class A Only and Food Crop Limitation Alternatives from consideration. However, the court found no additional flaws in the PEIR.

The court remanded the case to the trial court with direction to mandate that the SWRCB vacate its certification of the PEIR and its approval of the GO. The trial court has now so ordered.

In order to proceed with adoption of the GO, the SWRCB has chosen to revise the PEIR. This has been done by including analyses of the Class A Only and Food Crop Limitation Alternatives in Chapter 14. In addition, the State Water Resources Control Board has updated the discussions of U.S. EPA regulations, issues of concern, and information about biosolids application in the Executive Summary, the Introduction, Chapters 2 (“Program Description”) and 5 (“Public Health”), and elsewhere in the revised PEIR. This is more than what the court required, but it provides the reader more information about the current state of biosolids regulation and public discussions than might have been available if the SWRCB had chosen to make only the changes identified by the court.

For the most part, the analyses contained in the revised PEIR rely on the original environmental baseline established for the 1999 PEIR. This approach is consistent with the provisions of State CEQA Guidelines Section 15125 stating that the environmental setting consists of the physical environmental conditions as they exist at the time the notice of preparation was published and that the environmental setting will normally constitute the baseline for environmental analysis.

### **Master Response #6: Traffic Analysis**

The State CEQA Guidelines provide that the baseline for impact analysis is normally the environmental setting that existed at the time at which the EIR’s Notice of Preparation was sent out for review (State CEQA Guidelines Section 15125). Accordingly, the traffic analysis in the revised PEIR is based on the environmental setting in 1998. At that time,

substantial amounts of Class B biosolids were being transported and applied to sites in Kern, Kings, and Fresno Counties.

Nonetheless, the current situation regarding truck traffic to out-of-state application sites offers some insight into the traffic effects that would result from the Class A Only Alternative. Since 1999, the application of Class B biosolids has been banned in those counties. Nearby Tulare County banned the application of Class B biosolids in 1997. As a result of fewer opportunities for application of Class B biosolids in the southern San Joaquin Valley, southern California biosolids producers are increasingly utilizing application sites in Arizona and Nevada. For example, in 2002–2003, the Los Angeles City Bureau of Sanitation trucked approximately 50 tons of Class B biosolids from its Terminal Island Treatment Plant to Arizona each day for land application (City of Los Angeles 2002). In 2003, the Orange County Sanitation District (OCSD) trucked a total of approximately 11,470 dry tons of Class B biosolids to land application sites in Maricopa, Mohave, and Yuma County, Arizona and Nye County, Nevada. During this same period, OCSD also trucked approximately 14,850 dry tons of Class B biosolids to land application sites within the Fort Mohave Reservation on the California/Arizona/Nevada border (Orange County 2004).

In addition, biosolids generators continue to send such Class A or Class A Exceptional Quality biosolids to Southern San Joaquin Valley sites as allowed under local ordinance. For example, in 2002–2003, the Los Angeles City Bureau of Sanitation sent approximately 650 tons per day of Class A Exceptional Quality biosolids from its Hyperion Treatment Plant to an approved land application site in Kern County (City of Los Angeles 2002). In 2003, the OCSD applied a total of approximately 19,270 dry tons of Class A biosolids to sites in Kern and Kings County (Orange County 2004).

Also, some generators propose to deliver Class B biosolids to composting or treatment facilities in Kings and Kern Counties. Once treated, the resultant Class A EQ biosolids would be available for application within those counties. Composting requires the delivery of bulking agents to be mixed with the biosolids as part of the treatment to Class A EQ standards. Delivery of bulking agents such as wood chips and other green waste to the facilities, even when the agents are locally available, will add truck trips in comparison to delivery of Class B biosolids to a land application site.

The traffic analysis contained in the Class A Only Alternative in Chapter 14 of the final PEIR has been revised in response to a number of comments regarding the traffic analysis and changes that have occurred since 1998 that portend trends in traffic patterns.

## **Master Response #7: Letters Supporting Continued Land Application of Class A and B Biosolids**

Forty comment letters were received in support of the continued land application of both Class A and Class B biosolids, and adoption of the Modified General Order as analyzed in the PEIR. The comment letters provided support for information and conclusions in the draft PEIR, provided agency and region specific information on the value of

continued land application, provided additional information and documentation, both environmental and economic, regarding the advantages of land application under the proposed GO, and cited first-hand information from growers on the many agricultural benefits of using biosolids as fertilizer. The SWRCB acknowledges receipt of these comment letters, and has taken them into consideration along with others received.

### **Master Response #8: Changes to the Draft PEIR**

This change was made by the SWRCB when it certified the final PEIR for the proposed GO in 1999. Because this change was incorporated into the PEIR that was reviewed by the Court, the SWRCB has chosen to carry it forward into the revised PEIR. It was mistakenly marked as a change to that document.

## **Responses to Individual Comments**

Responses to individual written comments on the Draft EIR are provided below. Copies of the comments received are provided preceding the responses. As stated, copies of comments that are addressed entirely by Master Response #7 are provided at the end of this chapter.



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY  
REGION IX  
75 Hawthorne Street  
San Francisco, CA 94105

March 12, 2004

Wayne Verrill  
Management Practices Support Unit  
Division of Water Quality  
State Water Resources Control Board  
P.O. Box 100  
Sacramento, CA 95812

Re: Comments on Program EIR for General Order for Biosolids Land Application

Dear Mr. Verrill:

On behalf of the Clean Water Act Compliance Office, U.S. EPA Region 9, I am submitting the following comments on the biosolids draft PEIR, with respect to the 2003 revisions addressing 1) the Class A Only Alternative, and 2) the Food Crop Limitation Alternative.

EPA Region 9 concurs with the determination that the Modified General Order Alternative is the environmentally preferred alternative. The Class A Only Alternative and the Food Crop Limitation Alternative would in a number of situations result in increased fuel consumption, truck traffic and related environmental impacts while not significantly reducing impacts to public health and the environment. These are of course moot points at this time for most of Southern California, where counties have passed Class A Only ordinances or the equivalent. However implementation of the Class A Only ordinance could still result in significantly increased energy consumption and vehicle traffic for a sizeable number of treatment plants in Northern and Central California, particularly to those wastewater plants now applying Class B biosolids on lands owned by the wastewater treatment plants.

This Order will only be useful to the extent that Regional Boards implement it. To our knowledge, only the Central Valley Board has taken measures to date to implement it; hopefully other Regional Boards will use it.

Implementation of either of the two alternatives considered in this PEIR would require additional Regional Water Quality Control Board resources, and in particular resources in those Boards where the majority of biosolids are generated (Boards 2, 4, and 9). Additional oversight at the point of treatment is needed to verify that biosolids have in fact met Class A pathogen reduction. For composting operations, designated County LEA's already accomplish this, however for other Class A operations such as thermophilic digestion or pasteurization, verification of treatment to Class A levels would need to be made at the point of treatment.

It has become increasingly evident that Class B biosolids application must be accompanied by sufficient setbacks from residences; otherwise there are unacceptable aesthetic impacts which at some point may be evolving into actual health impacts. In many counties where a sizeable setback would have dealt with these aesthetic and potentially emerging health impacts, the county chose instead the simpler remedy of simply banning Class B throughout the county. A half mile setback from residential areas may be sufficient to prevent odors and contact with irritational volatile compounds in some areas, but additional setbacks may be needed in other areas, or as an alternative Class B be prohibited in zones that are slated for residential development in the near future. As to who makes the call on when not to allow Class B at a particular site, should the RWQCB's, the County Public Health Dept, the County Environmental Health Depts, or EPA take the lead?. If the RWQCB's assume a "lead" role in biosolids regulation, they may want the flexibility to make site-specific set-back calls while relying otherwise on the provisions in the General Order.

F1-2

Comments on the Class A-only alternative:

The PEIR identifies the range of impacts that need to be considered with respect to Class A biosolids, in particular increased energy consumption. It is of course difficult to project at this point whether the sum total of emissions and other traffic related impacts associated with Class A in comparison with Class B will increase or decrease as Class B applications in California are reduced either by regulation or simply by the fact that the Central Valley and Southeastern California are urbanizing. However it would be useful to do a full analysis of emissions and other impacts under several scenarios: i.e.

- coastal cities truck all Class B biosolids 300 to 600 miles to agricultural areas, inland cities apply Class B biosolids on-site
- coastal cities and inland cities truck all Class B biosolids 300 to 600 miles to agricultural areas
- coastal cities install on-site Class A processes, truck biosolids 0 to 100 miles; inland cities apply Class B on-site
- coastal and inland cities truck biosolids 200 miles to regional compost facilities, compost is hauled 10 to 200 miles to application sites, applied at 50 - 60% solids
- all biosolids are trucked to landfills (a number of POTWs today do use incountry landfills - to what extent capacity remains needs to be established.)
- all biosolids are trucked 200 - 300 miles to regional surface disposal sites

F1-3

It is conceivable that a coastal city that makes an upfront investment in an on-site Class A technology such as pelletization or in-vessel composting, while consuming more energy at the plant site, will achieve a very significant reduction in emissions, energy consumption, and related vehicle impacts, over continuing to truck the biosolids 600 miles or more to a site suitable for Class B biosolids, or trucking the biosolids 200 miles to a regional compost facility (which then, after composting, trucks the product 200 miles further and creates significant amounts of dust and particulate matter emissions while spreading the bulk compost).

On the other hand, a city in the Central Valley which has agricultural land right at the plant site would be creating substantial additional impacts if they are forced to truck the biosolids

to another location hundreds of miles away.

(It should be noted that one Class A Alternative not mentioned in the PEIR but which makes for about 1/4 of the Class A biosolids in California is long-term solar drying followed by testing for three categories of pathogens. Treatment plants using this option include San Jose, Palm Springs, Valley Center, Ridgecrest, Goleta, Blythe, and many small treatment plants in the Central Valley and Southeast CA, as well as LACSD at a drying site in AZ. Many others, e.g. Bakersfield, Delano, El Centro, Calexico, Brawley, etc. probably meet Class A but to date have not incurred the monitoring costs. This option is in most cases performed at the plant site and therefore does not involve energy consumption.)

F1-4

The PEIR briefly addresses impacts associated with surface disposal, another alternative that could be used more in the future if the Class A Only Alternative were selected. EPA Region 9 is concerned that the current requirements for surface disposal in 40 CFR 503 Subpart C are less protective than the land application requirements, unless the parcel in question is permanently designated as a disposal site, and this is one area that EPA may look at further in considering necessary programmatic amendments to 40 CFR 503. Subpart C currently sets limits for unlined sites for only 3 pollutants (As, Cr, and Ni), thus potentially allowing significant build-ups other pollutants such as lead, molybdenum, and cadmium. Tracking of the surface disposal sites and records maintenance is currently only required for 5 years after closure in 503 Subpart C.

F1-5

#### Comments on the Food Crop Limitation Alternative:

This option probably would have very little impact on existing or planned operations, other than creating an additional regulatory tracking burden.

According to our records and to the annual reports submitted to us, at present, nearly all biosolids produced in California that are land applied are:

a) treated to Class B and applied to feed or fiber crops in CA, AZ, or NV. The land being used for these crops is for the most part extremely marginal and will probably not be converted to food crops any time in the foreseeable future. In a few cases, this land may be converted to orchards bearing food crops; however there would probably be a significant time lapse between the end of biosolids application and the first harvests from these crops. Some of the land to which biosolids is now being applied will be converted in the future to non-agricultural uses such as residential or commercial.

F1-6

b) treated to Class A and applied to feed or fiber crops, or used for horticulture or landscaping. A small amount of Class A biosolids is used for fruit and nut tree orchards in Southern California.

If this alternative is to be considered further, a comparison should be made of biosolids products to other soil amendments that are currently allowed in California. Current data from greenwaste and manure composts show that in many cases, the levels of those pollutants identified by EPA as being of concern are present at concentrations similar to those in biosolids composts. EPA plans to reassess a new round of pollutants that may be found in biosolids for which we now have more data in the next three to five years. The levels of these pollutants in

F1-7

manure and greenwaste composts may also need to be looked at.



Please contact me at (415) 972-3514 or [fondahl.lauren@epa.gov](mailto:fondahl.lauren@epa.gov) if you wish to discuss this further.

Sincerely,

A handwritten signature in black ink, reading "Lauren V. Fondahl". The signature is written in a cursive style with a large, stylized "L" and "F".

Lauren V. Fondahl  
Biosolids Coordinator, Clean Water Act Compliance Office  
US EPA Region 9

## U.S. Environmental Protection Agency, Region IX

**Comment F1-1:** The commenter concurs with the draft PEIR determination that the Modified GO Alternative is the environmentally preferred alternative. The suggestion is made that additional oversight would be needed at the point of treatment to verify non-composted Class A treatment.

Response: Chapter 5 of the revised draft PEIR has a discussion of the regulatory roles of various State agencies in the classification and verification of biosolids treatment. Oversight of non-composted Class A treatment would primarily be accomplished through the existing NPDES permits administered by the RWQCBs (see page 5-25). See also the discussion of CCR Title 23 and 27 (page 5-26), and the applicant reporting requirements in the GO (Appendix A, Pre-Application Report, page 2-3).

**Comment F1-2:** The commenter notes that longer setbacks from off-site residences may be needed for Class B application sites in order to avoid unacceptable aesthetic impacts. The question is raised as to which agency would make the determination.

Response: RWQCBs will make individual site-specific determinations as to sufficiency of setbacks. If the GO setbacks are determined to be insufficient, individual WDRs will be indicated. Where county or local land application ordinances take precedence over RWQCB jurisdiction, the appropriate county or local agency will make the determination.

**Comment F1-3:** The commenter suggests various scenarios for additional transportation, energy, and air quality analysis.

Response: See master response #6 regarding transportation analysis.

The level of detail requested by the commenter is not commensurate with the statewide level of detail of this project. Therefore, while the air quality, energy, and transportation discussions of the Class A Only and Food Crop Limitation Alternatives have been revised, they do not reflect the requested level of detail. If approved, the proposed GO would apply statewide. Attempting to model various scenarios mixing distances, class of biosolid, beneficial use, disposal in landfills or disposal sites, on-site disposal, and other variables would be largely speculative. The essential decisions regarding treatment method, level of treatment, location of application, mix of application v. disposal, locations of viable application sites (depending upon the class of biosolids), and POTWs' investments in technology necessary to provide some established basis for study assumptions are outside the control of the SWRCB. These decisions are based on the individual needs and economics of the well over 100 sanitation agencies within California, in addition to the availability of land for biosolids application, the availability of biosolids disposal sites and landfills. As a result, a study at the detail suggested by the commenter would be speculative at best. CEQA does not require the lead agency to engage in speculation (State CEQA Guidelines Section 15145).

**Comment F1-4:** The commenter opines that solar drying as a Class A treatment, particularly at POTWs where this is possible on-site, would not require increased energy or transportation costs, and should be described as a potential option for Class A treatment in the Final EIR.

Response: Solar drying is an option used by a number of POTWs to produce Class A biosolids. It involves applying wet sewage sludge over a surface to a depth of approximately 9 inches (deeper when placed in a basin). The sludge is allowed to dry for a period of not less than 3 months. During 2 of the 3 months, the ambient average air temperature must be above freezing. Drying requires a large area over which biosolids may be spread. As a result, this would most likely have some practicality for small generators in rural areas where land is available to be used for drying. It would not be practical for the urban POTWs that produce the great majority of the biosolids in the state.

A more popular approach, based on the level of actual use, is the outdoor composting of biosolids. Class A or Class A EQ standards are met through the heating of the composting biosolid through exposure to sunlight and, more importantly, heat-producing biological activity within the material. However, composting requires the addition of substantial amounts of bulking agents (typically wood chips or other green material), which involves truck trips from the source of such agents, as well as mechanical means to move and thoroughly mix the composting biosolids during the process. It does not necessarily offer lowered energy or transportation costs overall because of the need to transport the biosolids to a composting facility, bring bulking agents to the facility, and mix the composting biosolids on site.

**Comment F1-5:** The commenter expresses concerns that current requirements for surface disposal of biosolids are less protective than requirements for land application for beneficial use.

Response: The concern is acknowledged, as is the statement that surface disposal is an area that the U.S. EPA may look at further as needing amendments to current regulations.

**Comment F1-6:** The commenter observes that since a relatively small amount of biosolids are currently applied to land producing food crops in California, the Food Crop Limitation Alternative would have little impact other than creating an additional regulatory tracking burden.

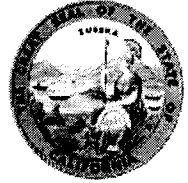
Response: The observation is acknowledged. The time period for the limitation is indeterminate. The regulatory tracking burden would be greatly enhanced if the limitation in perpetuity alternative were to be put into effect, thereby requiring property deed restrictions, and possible permanent loss of potential land value.

**Comment F1-7:** The commenter suggests that the EIR should compare the level of pollutants of concern in biosolids versus manure/greenwaste composts as part of the Food Crop Limitation Alternative analysis.

Response: The purpose of an EIR is to disclose the potential environmental impacts of the project and, to the extent necessary to allow a comparison, a reasonable range of feasible alternatives to the project that would reduce one or more of the project's impacts. Neither the project, nor its alternatives include the application of manure or greenwaste composts to land. Examining the level of pollutants in manure or greenwaste, which are not a part of the proposed GO, would not contribute to a disclosure of the project's impacts.



State of California—Health and Human Services Agency  
**Department of Health Services**

  
 California  
 Department of  
 Health Services


**ARNOLD SCHWARZENEGGER**  
 Governor

March 8, 2004

Mr. Wayne Verrill  
 Management Practices Support Unit  
 Division of Water Quality  
 State Water Resources Control Board  
 P.O. Box 100  
 Sacramento, CA 95812

**COMMENTS:** Revised Draft Statewide Program EIR Covering General Waste Discharge Requirements for Biosolids Land Application

The California Department of Health Services' Food and Drug Branch (FDB) submits to the State Water Resources Control Board (SWRCB) the following comments on the agency's proposed document entitled "Revised Draft Statewide Program EIR Covering General Waste Discharge Requirements for Biosolids Land Application."

**1) Chapter 5. Public Health, Page 5-31:**

The revised Draft Program Environmental Impact Report (Draft PEIR) states on Page 5-31 that uncooked food sold by retail establishments and food consumed by the public is not directly protected by the Model Food Code (MFC), and that MFC is used by local and state agencies responsible for inspecting and enforcing safe food handling practices at the retail level. The statement is incorrect. MFC is a federal recommendation for adoption by states. California, however, does not adopt MFC because it already has the California Uniform Retail Food Facilities Law (CURFFL).

Accordingly, FDB suggests that the statement be revised to read: ". . . Note that uncooked food sold by retail establishments and food consumed by the public is ~~not directly~~ protected by the California Uniform Retail Food Facilities Law ~~Model Food Code~~, which incorporates the latest ~~and best~~ scientifically based advice for preventing foodborne illness. This law Code is used by local ~~and state~~ agencies responsible for inspecting and enforcing safe food handling practices at the retail level. . ."

S1-1

## **2) Appendix A. Draft Text of the General Order, Page 20, Item 3:**

Item 3 on page 20 of the "Draft Text of the General Order" requires a discharger to submit a copy of the "Notice of Intent" (NOI: i.e., application for coverage under the general order) to the offices of the Department of Fish and Game and various local agencies. However, it does not require a discharger to submit a copy of NOI to FDB for review.

FDB would like to review the NOI and provide comments to Regional Water Quality Control Board (RWQCB) before it is approved. Recent food borne illness outbreaks have raised suspicions that some of the outbreaks might have been related to the use of biosolids. Although none of the outbreaks have been directly linked to the use of biosolids, it is plausible that food crops (e.g., vegetables, fruits, seeds) could be contaminated with pathogens when biosolids were applied on lands for growing food crops even though the application complied with the requirements of the U.S. EPA's Part 503 regulations. Recent studies have also demonstrated the ability of pathogens to gain access to the interior of fruits, vegetables, and other produce through breaks in the surface of the product, uptake through the root system, and through stem scars. Thus, reliance on the regulations or certain county ordinances may not necessarily ensure the safety of food crops grown on lands applied with biosolids. Further, FDB found during several illness outbreak investigations that it was quite hard, if not impossible, in some counties to conclusively determine whether biosolids were applied to lands at issue. The review of the NOI will provide FDB an opportunity to provide comments regarding any additional precautionary measures that may be necessary as well as to use the NOI for developing a database for tracing back the source of contamination when any illness outbreak is suspected to be associated with the application of biosolids.

Accordingly, FDB suggests that the statement in the item 3 on Page 20 be revised to read: "The discharger shall submit copies of each NOI to the appropriate regional office(s) of the Department of Fish and Game, Department of Health Services' Food and Drug Branch, local water district, City Planning Department, County Health Department(s) . . ."

## **3) Appendix A. Draft Text of the General Order, Page 22, Item 17:**

Item 17 on page 22 of the "Draft Text of the General Order" lists the phone number for FDB as (916) 445-2263. This is incorrect. The phone number of FDB has changed to (916) 650-6500.

S1-2



Page 3.

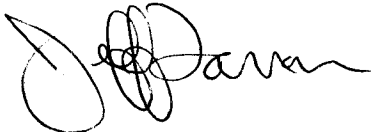
Comments: Revised Draft Statewide Program EIR Covering General Waste Discharge  
Requirements for Biosolids Land Application

Accordingly, FDB requests that the statement be changed to read: "The discharger shall report any noncompliance which may endanger human health or the environment. Any such information shall be provided to the RWQCB Executive Officer within 24 hours. . . Also the discharger shall notify the Office of Emergency Services (1-800-852-7550), the State Department of Health Services, Food and Drug Branch ((916) 650-6500) ~~(916) 445-2263~~, and the local health department as soon as practical but within 24 hours after the incident."

S1-3

FDB has no comments on the "two additional alternatives" in Chapter 14. If you have questions regarding the comments above, please contact me or Dr. Chang-Rae Lee, Research Scientist IV, at (916) 650-6601.

Sincerely,

A handwritten signature in black ink, appearing to read "Jeff Farrar", with a stylized, cursive script.

Jeff Farrar, DVM, Ph.D., MPH, Chief  
Food Safety Section  
Food and Drug Branch

### **California Department of Health Services**

**Comment S1-1:** The commenter suggests changes to page 5-30 to correct the discussion of the California Uniform Retail Food Facilities Law.

Response: The text of the Final EIR has been changed as suggested.

**Comment S1-2:** The commenter requests that any Notice of Intent (NOI) filed for coverage under the proposed GO be sent to the California Department of Health Services Food and Drug Branch for review. Review of the NOI would allow the Food and Drug Branch an opportunity to provide comments regarding any additional precautionary measures that they believe would be needed for the given application.

Response: The draft GO currently provides for submittal of the NOI by the applicant to a variety of state and local agencies, including the County Health Department of the county in which the land application (discharge) is proposed. The text of item 3 on page 20 of Appendix A of the PEIR has been revised to require notification of the California Department of Health Services Food and Drug Branch.

**Comment S1-3:** The commenter requests that the phone number for the Food and Drug Branch be corrected to (916) 650-6500.

Response: The phone number has been changed on page 22 of Appendix A of the PEIR.





DEPARTMENT OF CONSERVATION  
STATE OF CALIFORNIA

March 16, 2004

DIVISION OF  
LAND RESOURCE  
PROTECTION

■ ■ ■  
801 K STREET  
SACRAMENTO  
CALIFORNIA  
95814

PHONE  
916/324-0850

FAX  
916/327-3430

INTERNET  
consrv.ca.gov

■ ■ ■  
ARNOLD  
SCHWARZENEGGER  
GOVERNOR

Mr. Wayne Verrill  
State Water Resources Control Board  
Division of Water Quality  
1001 I Street  
Sacramento, CA 95814

Subject: SCH# 1998102088 – Programmatic Environmental Impact  
Report for the General Waste Discharge Requirements for  
the Discharge of Biosolids to Land for Use as A Soil  
Amendment in Agricultural, Silvicultural, Horticultural, and  
Land Reclamation Activities (General Order)

Dear Mr. Verrill:

The Department of Conservation's Division of Land Resource Protection (Division) monitors farmland conversion on a statewide basis and administers the California Land Conservation (Williamson) Act, California Farmland Conservancy Program, and other agricultural land conservation programs. We have reviewed the document cited above along and the General Order.

The proposed project is the adoption and implementation of the proposed General Order (GO) that contains statewide minimum standards for the land application of sewage sludge (biosolids). The GO is largely based upon the minimum standards of Title 40 of the Federal Code of Regulations (CFR) Part 503 upon which the GO is largely based. We respectfully offer the following comments regarding the PEIR and the GO:

Executive Summary

The Executive Summary indicates that some counties have banned the land application of biosolids and other counties have adopted their own conditions for the practice. It would be helpful if the final document included the adopted ordinances under which the counties conditionally allow the practice.

### Enforcement

- |   |      |
|---|------|
| • How will the requirement that the discharger notify the RWQCB of any noncompliance be enforced?   | S2-2 |
| • How will be statewide tracking system be maintained?  | S2-3 |
| • How will a person be informed of the application of biosolids on the land he or she intends to lease or purchase? A disclosure statement indicating whether a seller has applied biosolids, to farmland may be required by the County.  | S2-4 |
| • What contingencies are in place or are proposed in the event that the heavy metals thresholds have been exceeded?   |      |
| • What contingencies are in place or are proposed in the event that a hauler delivers a load of biosolids that exceeds the maximum metals content? Is a monitoring or tracking mechanism is to be implemented? Are the haulers to be required to keep records or manifests of the loads that are transported from the treatment plants? What is to prevent the application of a hazardous load onto farmland? | S2-5 |

### Cumulative Impacts

The discussion pertaining to the potential for adverse cumulative or long-term impacts resulting from the use of biosolids on agricultural lands is inconclusive. The PEIR indicates that a long-term study has not yet been completed, thus it would be premature to reach a conclusion that there would be minimal cumulative impact. The calculation that determines the number of years and the application rate remains is questionable. A letter dated July 3, 2003, from Ronald Liebert, Associate Counsel of California Farm Bureau Federation to the U.S. EPA, voices concern regarding whether the EPA model that pertains to the accumulation of heavy metals over time. The letter indicates that it would take 10 to 11 years for heavy metals to accumulate beyond the acceptable limits instead of 100 years as stated in the Title 40 of the Federal Code of Regulations Part 503, upon which the GO is largely based. At the 10 to 11 year accumulation rate, land that is presently under Williamson Act contract, or is prime, unique or of statewide importance would no longer be productive, and would be retired or fallowed and possibly be converted to another use. Should this occur, the potential for ultimate loss of agricultural resources from accumulation of heavy metals and other compounds beyond the allowable limits may be significant under the California Environmental Quality Act, and would trigger a need to discuss mitigation measures in this programmatic document.

- |   |      |
|---|------|
| • What mitigation measures will be implemented for the loss of agricultural resources in the event that the lands upon which biosolids are applied are no longer viable for producing food (food crops or grazing) or fiber? Sites used for food production are very difficult if not impossible to relocate if the soil has been contaminated. Changing to more tolerant crops does not constitute mitigation. | S2-6 |
|---|------|

- What measures would be implemented in the event that site clean up becomes necessary?
- We respectfully request that the model calculations be closely examined and back calculated by the appropriate SWRCB staff prior to certification of the PEIR and adoption of the GO. Please provide verification in the response to comments whether the calculations in the EPA model are correct.

Consistency with the Williamson Act

The GO contains requirement for consistency with State and local laws and requirements. The GO should also require the discharger to coordinate with the County, which will make the determination of whether the application of biosolids is compatible with the Williamson Act prior to application. Please contact the Division's Williamson Act Program staff for additional guidance.

Thank you for the opportunity to review the PEIR and the GO. Please do not hesitate to contact Jeannie Blakeslee at (916) 323-4943 if you have any questions regarding these comments.

Sincerely,



Dennis J. O'Bryant  
Acting Assistant Director

cc: State Clearinghouse

S2-7

## California Department of Conservation

**Comment S2-1:** The commenter recommends that the PEIR include copies of local biosolids ordinances.

**Response:** A number of California's counties have adopted ordinances regulating the application of biosolids to land. This includes all of the counties in the Southern San Joaquin Valley. These ordinances, enacted under each County's "police power" (the same power used in the adoption of a zoning ordinance), operate independently of the SWRCB's regulations. In counties that have adopted biosolids ordinances, an applier would be required to obtain a permit from the County and a permit from the RWQCB before biosolids could be applied to land. In addition to any requirements of the local ordinance and RWQCB permit, application would be subject to the federal regulations established under 40 CFR Part 503.

Table 2-2c (see Chapter 3) lists some of the counties that have enacted local ordinances, as of May 2004. In cases where application is restricted to Class A or Class A-Exceptional Quality (EQ) biosolids, the ordinances are more restrictive than the proposed General Order. In those situations, the RWQCB would not issue a permit authorizing the application of Class B biosolids.

While these local ordinances are of interest within their counties, inclusion of their texts is not necessary to analyzing or disclosing the potential environmental effects of the proposed GO. In effect, the proposed GO will not apply in those counties with more restrictive ordinances. Therefore, biosolids application would require the grant of an individual permit from the applicable RWQCB, as is the case currently.

Limiting land application to Class A or EQ biosolids will have certain indirect impacts in that it requires POTWs that had been land applying biosolids in the affected county to either treat their biosolids to Class A or EQ standards (at generally higher energy demand), or find another site outside the county on which to apply Class B biosolids (potentially at greater distance). These impacts have been discussed in the analysis of the Class A Only Alternative.

The summaries of local ordinances in Appendix C have been updated to reflect the above information.

**Comment S2-2:** The commenter questions how the requirement that the discharger notify the RWQCB of any noncompliance will be enforced.

**Response:** Enforcement methods permitted to the RWQCBs as established by the State Legislature are contained in Chapter 4, Article 4 of the Porter–Cologne Water Quality Control Act.

**Comment S2-3:** The commenter inquires as to how the statewide tracking system (Mitigation Measure 4-3) would be maintained.

Response: Data for the tracking system would be collected through Pre-Application Reports submitted by dischargers (see the draft PEIR, Appendix A).

**Comment S2-4:** The commenter questions how would a potential new land purchaser or lessee be informed about the application of biosolids to the property.

Response: Under Finding 15, the GO states that the requirements of the GO apply to the landowner as well as the biosolids generator. Both are equally NOI applicants, and hence dischargers. A lessee may also be included. D. Provision (5.) of the GO requires notification and submittal of a new NOI to the RWQCB 30 days in advance of any proposed transfer of responsibility under the GO to a new discharger (and landowner). After the date of transfer, the new discharger (and landowner) is liable for all compliance with the GO. Further, D. Provision (7.) of the GO requires the discharger (and landowner) to inform any grower using the site of the conditions of the GO.

**Comment S2-5:** The commenter asks what contingencies are in place or are proposed in the event that the heavy metals thresholds for soil accumulation are exceeded, or in the event that a hauler delivers a load of biosolids that exceeds the maximum metals content? Further, the commenter asks if a monitoring or tracking system will be implemented, if haulers are required to keep load records, and what will prevent the application of a hazardous load onto farmland?

Response: Each permitted discharger under the general waste discharge requirements (GWDRs) is required to conduct specific types of monitoring, including for heavy metals, and submit an annual monitoring report (see the draft PEIR, Appendix A). The annual monitoring report shall include constituent concentration data for each source of biosolids applied under the GWDRs. The discharger is responsible for ascertaining the quality of biosolids from each source, not the hauler. The annual monitoring report shall also include pollutant-loading data for each application site. In addition to the annual report, the discharger is required to retain specific records on all monitoring data collected. In the event that any provisions of the GWDRs are violated, including exceeding heavy metal thresholds and concentrations, the RWQCBs have the authority to enact the enforcement provisions of Chapter 4, Article 4 of the Porter –Cologne Water Quality Control Act.

**Comment S2-6:** The commenter suggests that the application of biosolids in accordance with 40 CFR Part 503 may result in the accumulation of unacceptable levels of heavy metals in the soil in much less time (10–11 years) than the 100 years assumed by U.S. EPA in enacting Part 503. Excess accumulation of metals would result in the loss of productivity of agricultural land that is currently under Williamson Act farmland protections or that is prime, unique or of statewide importance. The loss of productivity would be a significant cumulative effect for which mitigation measures should be discussed in the PEIR. The commenter asks what mitigation measures would be implemented for the loss of agricultural resources, or in the event that site clean up becomes necessary.

Further, the commenter disagrees with the methodology used by the U.S. EPA in estimating the long-term accumulation of metals in the soil as a result of biosolids

application. The commenter requests that the Board independently verify through its own analysis whether the calculations in the U.S. EPA model are correct.

Response: Prior to enacting Part 503, the U.S. EPA undertook extensive study of the potential effects of applying biosolids to land. As part of this, U.S. EPA developed exposure risk models that projected the exposure that would occur to a Highly Exposed Individual. The SWRCB has chosen to rely on the U.S. EPA risk analysis. See responses to comments NGO 1-9 regarding pollutants in biosolids and NGO 2-3 and 2-5 regarding lead levels accumulation.

The draft PEIR recognized that the U.S. EPA analysis has been criticized for using average soil conditions and making assumptions when data were missing to complete the risk assessments for potential crop effects under the Part 503 regulations. As page 4-9 of the draft PEIR mentions, an analysis of the NRCS soil database indicates that only a small proportion (perhaps 10–15%) of California soil series have conditions that would lend themselves to potential problems under poor management and would therefore make them potentially susceptible to heavy metal bioavailability problems. The proposed GO requires that cumulative loading limits for heavy metals at land application sites include the natural levels of heavy metals in the soil before application of biosolids (Discharge specification 4). Based on the above analysis, significant impacts relating to land productivity and heavy metals accumulation on agricultural soils could occur under the proposed GO at poorly managed sites, but this circumstance would most likely be rare. The probability that the impact would be rare does not by itself reduce the potential for adverse effects in specific areas of California caused by the buildup over time of the bioavailable forms of heavy metals at phytotoxic levels in a small number of agricultural soil-crop combinations. Therefore, the draft PEIR includes Mitigation Measure 4-1, described below, which would reduce this impact to a less-than significant level.

Mitigation Measure 4-1 provides that the GO Pre-Application Report should be revised to require that WDR applicants provide sufficient soil and site information such that RWQCB staff can determine whether soils would be degraded and/or land productivity would be reduced as a result of biosolids application. In particular, providing the information is intended to ensure that 1) essential soil nutrients other than nitrogen are applied so that significant nutrient imbalances do not occur, 2) metals-related phytotoxicity does not occur, 3) metals related to forage toxicity or mineral deficiencies and other trace metals related problems do not occur on hay lands and pasture lands, 4) increases in salinity do not occur to the point that the yields of the crop(s) typically grown at the site is appreciably reduced, and 4) appreciable accelerated soil erosion does not occur. The Pre-Application Report already requires sufficient information with which effects of potential nutrient imbalances, metals phytotoxicity, and excessive salinity can be analyzed; this information should be used by a certified soil scientist, or a certified agronomist to evaluate the above potential effects on land productivity. This mitigation measure also provides that the soil scientist and/or agronomist should make recommendations in a letter report to accompany the Pre-Application report regarding the proper rate of biosolids applications, any soil management (such as supplemental fertilizers), appropriate crop, and grazing practice recommendations, considering the nature of the application site soils and biosolids characterization data, and the need to preserve short term and long term land productivity. The GO Pre-Application Report

also should be amended to include the erosion hazard (derived from USDA soil survey reports) of the proposed application site.

Provided that the applicant, a soil scientist, or agronomist has provided written confirmation to the RWQCB that soils would not be degraded and/or land productivity would not be reduced as a result of nutrient imbalances, metals-related phytotoxicity, or adverse salinity effects, biosolids may be applied on any site having a “slight” limitation as defined in the Limitations to Land Application table on page 4-6 of the draft PEIR. At sites having a “moderate” limitation, biosolids may be applied only where the crop is not known to be particularly sensitive to metals and nutrient imbalances, or is not known to be bioaccumulative of heavy metals. Sites having a “severe” limitation are excluded from eligibility under the GO and a site-specific waste discharge investigation and planning study should be conducted by a qualified soil scientist or agronomist to provide, in writing to the RWQCB, written confirmation that biosolids application would not cause soil degradation and would not reduce crop yield.

Additionally, the draft PEIR addresses the potential impact of changes in farmland classifications; more specifically, classifications of the California Department of Conservation’s Important Farmland Mapping and Monitoring Program, which considers factors such as salinity, fertility, and toxicity. The draft PEIR discusses farmland productivity issues in Chapter 4, which could adversely affect farmers and agencies administering programs, such as Williamson Act contracts. The draft PEIR concludes that although the application of biosolids could affect the classification of specific farmlands in various ways (including improved productivity), changes in classification would probably be unusual. This impact is considered less than significant because changes would most likely be rare and would not result in environmental impacts over and above those already evaluated in Chapter 4 of the draft PEIR. Additionally, implementation of the mitigation measures recommended in this chapter (including Mitigation Measure 4-1 described above) would reduce effects that are likely to lead to changes in farmland classification by ensuring that toxicity and adverse soil fertility problems would not occur.

Because of the above restrictions and testing requirements, no loss of productivity is expected to occur as a result of the proposed GO. Further, levels of metal accumulation will not become so high as to require site clean up.

**Comment S2-7:** The commenter suggests that the GO should require the discharger to coordinate with the County of proposed land application for a determination of compatibility with the Williamson Act prior to application.

Response: Under requirement D. Provisions (3.) of the GO, the discharger shall submit copies of each NOI to the County Agricultural Commissioner with jurisdiction over the proposed application site, and shall submit proof of notification to the RWQCB.

March 15, 2004

**Via First Class U.S. Mail**

Mr. Wayne Verrill  
Management Practices Support Unit  
Division of Water Quality  
State Water Resources Control Board  
P. O. Box 100  
Sacramento, CA 95812

Re: Comments on the SWRCB's Revised Draft Statewide Program EIR Covering  
General Waste Discharge Requirements for Biosolids Land Application.

As all are aware, one of the outcomes of the legal challenge to the SWRCB's prior EIR relating to its former general order regarding the land application of biosolids was that the Third District Appellate Court found that the alternative analysis in that EIR was inadequate; inadequate to the point that it warranted remanding the matter to the SWRCB with directions that it set aside its former general order and former EIR and cure the inadequacy. The *Revised* EIR at issue herein is the SWRCB's staff and consultants attempt to address that inadequacy.

The critical difference between the revised EIR and the prior EIR is that now, for the first time, the individual SWRCB members (as well as the SWRCB's staff members who will be making a recommendation to the individual SWRCB members) have at least three (3) different approaches to the land application of biosolids set forth and described in some detail in the EIR which the individual SWRCB members *can legally adopt* and which *will meet* their goals and objectives and obligations under the law. The prior EIR effectively and wrongfully presented and analyzed only a single approach which the individual SWRCB members could legally adopt.

In the Revised EIR the three approaches available to the SWRCB are (1) simply adopt the same GO which it adopted several years ago; (2) adopt a GO which is identical to the prior GO except that it does not allow the land application of "Class B" biosolids, but only "Class A" biosolids (Class A biosolids contain significantly *less* pathogens [i.e., disease causing organisms]) than "Class B" biosolids); or (3) adopt a GO which is identical to the prior GO except that it does not allow the land application of *any* biosolids on crops grown for human consumption.

Given what the CDWA has learned through its extensive research and participation in matters involving the land application of biosolids over the last several years, the CDWA believes each of these three alternative approaches will unnecessarily and unreasonably subject the public and the environment (i.e., the state's surface waters, groundwaters, limited prime and scarce farmlands, air quality, ecosystems, etc.) to potentially substantial short and long term adverse impacts. Given the undisputed *potential* for such impacts to result from such land applications of biosolids, such applications should not be authorized since it is simply not worth the risk of such impacts to the public and the environment. If there is truly no other more reasonable and more protective alternative to the handling of biosolids other than such applications, and, hence, the environment and the public are essentially stuck with such applications as being the "best of the worst" means to handle biosolids, then that is a different story.

Unfortunately, neither the individual SWRCB board members nor the public have *ever* been presented with a meaningful analysis of whether the alternative approaches to the land application of biosolids described in the prior and Revised EIRs do in fact represent the best methods, environmentally and/or otherwise, to handle biosolids. From day one, the SWRCB's staff (wrongfully) took the approach that the SWRCB was going to authorize some method of land application of biosolids no matter what, and the only question it was going to decide was what conditions, if any, should it impose on such land applications. As such, arguably the most informative and helpful analysis to the public and the individual SWRCB members, i.e., the analysis of how all types of land application of biosolids compare environmentally, economically, etc., with other methods of handling biosolids, e.g., using biosolids as an alternative daily cover in landfills, has not been, and sadly potentially never will be, undertaken.

L1-1

Thus, that is the context we currently find ourselves. We are stuck with comparing various forms of land application with each other without any meaningful comparison of all types of land applications with *non*-land application methods of handling biosolids. With regard to the prior EIR's analysis and discussion of alternative forms of land application in its prior EIR, the Third District Court of Appeals determined that such analysis and discussion was inadequate in that the SWRCB's EIR wrongfully rejected two alternative approaches to the land application of biosolids. As a result, the individual SWRCB board members and its staff now, for the first time, must consider and analyze these two other approaches in detail and compare and contrast them with the approach it adopted several years ago.

Assuming that the only choices which are available to the SWRCB are the three approaches set forth above and in the Revised EIR (a big assumption, and one which CDWA does not concur with), then CDWA strongly recommends that *at the absolute minimum* the SWRCB's new GO should only authorize the land application of Class A biosolids *and* only authorize the land application of Class A biosolids to *non*-food crops. While CDWA believes the mere limitations to Class A biosolids and non-food crops do not even come close to adequately protect the public and the environment from the potentially substantial short and long-term adverse impacts from such applications of biosolids, such limitations do and will at least

*substantially lessen* the potentially substantial adverse impacts that would otherwise result in the absence of these limitations.

↑ L1-1

1. **Class A Only Alternative.**

a. **Why Should the SWRCB limit the GO to only Class A biosolids?**

At the outset it should be noted that what is at issue before the SWRCB is the adoption of a general order which would set forth general, statewide waste discharge requirements for the land application of biosolids. The purpose of such a *general* order is to make it easier for potential biosolid land appliers to obtain a permit to land apply biosolids by streamlining the permitting process. However, any potential biosolid land applier *can still* seek and obtain an *individual site-specific* permit to land apply biosolids in a manner that is not authorized in the general order. (See, e.g., finding no. 1 of proposed GO.) (The analysis in the Revised EIR seems to entirely overlook the fact that individual site-specific permits can still be sought and obtained.) As such, the real effect of the general order will be to *encourage* various types of land application by making it easier to obtain a permit for such applications. Contrary to what the Revised EIR suggests, a GO which only authorizes Class A biosolids will not and cannot prohibit the land application of Class B biosolids pursuant to an individual site-specific permit.

L1-2

The question before the SWRCB, therefore, is why should it limit its GO to only Class A biosolids, and thereby *discourage* the land application of Class B biosolids? To understand why, the individual SWRCB members must understand the difference between Class A and Class B biosolids. The difference is of course that Class A biosolids are biosolids that have been treated to “essentially eliminate” the pathogens (i.e., disease causing organisms) from the biosolids *before* the biosolids leave the processing facilities and, hence, before they are scattered across the state’s prime and scarce farmlands and introduced into the states’ soils, water supplies, food supplies, air supplies, delicate ecosystems, etc. Class B biosolids, on the other hand, leave the processing facilities with *substantial amounts* of viable pathogens *still present* in the biosolids.

Why should the SWRCB encourage the elimination of pathogens *before* the biosolids are introduced into the environment? The answer is simple. By essentially eliminating the pathogens from biosolids *before* the biosolids are introduced to the environment via land application, the potential short and long-term problems associated with the introduction of those pathogens into the environment, i.e., into our state’s surface waters, groundwaters, limited prime and scarce farmlands, air quality, delicate ecosystems in and around land applications sites, food supply, etc., will also be “essentially eliminated.”

L1-3

The potential for adverse impacts from the land application of Class B biosolids, which have *not* had pathogens “essentially eliminated” prior to their land application, is undisputed and recognized and acknowledged by everyone, including the EPA as well as the SWRCB’s staff. Because of this undisputed potential, both the EPA and the SWRCB’s staff have imposed various restrictions on the land application of Class B biosolids, e.g., restrictions on public access and the

timing of the harvesting of food crops, run off controls, etc.

↑ L1-3

However, even if the individual SWRCB members and/or its staff were convinced that the various protections against the substantial numbers of viable pathogens present in Class B sites were adequate, there is always and will always be human carelessness with respect to compliance with those protections, acts of mother nature which can thwart such compliance, and even reckless or intentional disregard of such compliance as a result of the extreme-inadequacy of state and federal staff to monitor and police compliance with those protections, or otherwise. Thus, the very real risk of non-compliance with the various protections against the pathogens in Class B biosolids is, in and of itself, a compelling reasons to *encourage* the elimination of the pathogens *prior to* their introduction into the environment via land applications, and thus restrict the SWRCB's GO to only Class A biosolids.

L1-4

But by far the most obvious and compelling reason to encourage the elimination of pathogens *before* the biosolids leave the processing facilities (i.e., to limit the SWRCB's GO to only Class A biosolids) is because ***no one, neither the EPA, the individual SWRCB members, the SWRCB's staff, the Regional Boards, etc., have performed an assessment of the potential risks on the public and the environment from the introduction of any of the tens of thousands of known and unknown pathogens present in biosolids.***<sup>1</sup> The only "risk assessment" which the EPA, or anyone else, has thus far conducted was on a handful (i.e., twenty-four (24)) of the *chemicals* present in biosolids. That risk assessment looked at and analyzed various potential exposure pathways by which the environment and the public could come into contact with these chemicals, e.g., by drinking groundwater underlying biosolid application sites, by consuming food grown on land application sites, etc. The problem, however, is that there is estimated to be

L1-5

---

<sup>1</sup> "It is disturbing that EPA officials defending the [503] Rule have not been forthcoming in informing the public that no risk assessment for sludge-borne pathogens *has ever been done*." (See letter from Dr. Lewis', an EPA microbiologist, dated September 28, 1999 to the Kern County Board of Supervisors, emphasis added). (AR 7372). (Note "AR" denotes references to the official "Administrative Record" utilized in the litigation which resulted in the preparation of this Revised EIR.)

As the EPA, itself, expressly states in its 503 regs: "The [EPA] Administrator concluded that it is not feasible, based on current information and the state of analytical capability, to develop numerical limitations for pathogens, vector attraction reduction, and Total Hydrocarbons at this time using the type of exposure assessment employed to develop numerical limitation for other pollutants. (Fed. Regis. Vol. 58, No. 32, pg. 9322). (See also, *Id.* at pg. 9324, "*The pathogen requirements in the part 503 regs are not based on the results of an exposure assessment.* Instead, the requirements are performance standards based on the demonstrated ability of treatment processes to reduce pathogens in the sewage sludge." [emphasis added.]

over sixty-thousand (60,000) chemicals in biosolids and over one-thousand (1,000) new ones introduced into the waste streams each year. (see AR XXIV:7372 & AR XXIV:7302, respectively.) More on this will be discussed later, however, for purposes of this *pathogen* discussion, ***there was no such risk assessment, and at the present time has not been any such risk assessment, performed on any of the tens of thousands of known and unknown pathogens present in biosolids!***

A major part of the problem is that no one can even *identify* all the pathogens present in biosolids, must less conduct a comprehensive risk assessment on the public and environment from each and every one of those pathogens. Even if a comprehensive risk assessment was somehow undertaken, the unfortunately reality is that “no assessment of the risks associated with the land application of sewage sludge can ever be considered to be complete when dealing with microorganisms.” As the authors of "Hazards from Pathogenic Microorganisms in Land-Disposed Sewage Sludge," explain:

“It should be recognized that the list of pathogens is not constant. As advances in analytical techniques and changes in society have occurred, new pathogens are recognized and the significance of well-known ones changes. Microorganisms are subject to mutation and evolution, allowing for adaptation to changes in their environment. In addition, many pathogens are viable but nonculturable by current techniques [cite], and actual concentrations in sludge are probably underestimated. Thus, no assessment of the risks associated with the land application of sewage sludge can ever be considered to be complete when dealing with microorganisms. As new agents are discovered and a greater understanding of their ecology is developed, we must be willing to reevaluate previous assumptions.” (AR 2148).<sup>2</sup>

Given that there has been *no* risk assessment of the tens of thousands of pathogens in biosolids, and further than even if one was attempted it is undisputed that it could never be considered complete, one would have to throw all common sense and reasonableness out the window to find that there will not be a significant benefit to the public and the environment by “essentially eliminating” the pathogens *before* they are introduced to the public and the environment via land application. With *no* risks assessments on any of the tens of thousands of pathogens in biosolids, that means that none of the various restrictions on Class B biosolids proposed by the EPA as well as the SWRCB have been analyzed to assess the risks to the public

---

<sup>2</sup> To make matters worse, one must bear in mind and take into consideration our current inability to effectively detect pathogens: "Currently, methods to determine the risk of disease from pathogens in land-disposed sludge are inadequate because the sensitivity of pathogen detection is poor. The application of recombinant DNA technology (gene probes and polymerase chain reaction) to environmental samples may provide increased sensitivity for detecting specific pathogens in land-disposed sludge and greatly improved risk assessment models for our exposure to these sources of pathogens." (*Id.* AR 2161).

and the environment, from soil biota to humans. There simply has not been any analysis thus far to confirm that the land application of Class B biosolids in compliance with those restrictions will not subject the public or the environment to potentially significant short term and/or long term adverse impacts.

↑  
L1-6

Thus far it appears the Revised EIR has entirely failed to acknowledge any benefit from essentially eliminating the pathogens before biosolids are land applied, and, hence, essentially eliminating the potential adverse impacts from those pathogens. Given the undisputed nature of pathogens and their ability to mutate, evolve, adapt, etc., and the undisputed lack of any risk analysis of any of the tens of thousands of pathogens in biosolids when biosolids are land applied with the various restrictions on Class B biosolids, it would be manifestly unreasonable and unfair for the Revised EIR to not acknowledge the significant and obvious benefit of “essentially eliminating” the pathogens *before* the biosolids are land applied. The Revised EIR should, therefore, be further revised to recognize this obvious benefit and factor this benefit into the EIR’s comparative analysis of the three approaches to the land application of biosolids and in the EIR’s assessment of the “environmentally superior” alternative.

L1-7

**b. Why Should the SWRCB *Not* Limit the GO to only Class A biosolids?**

While, as just discussed, there is a tremendous benefit to limiting the GO to only Class A biosolids since doing so will “essentially eliminate” pathogens from the biosolids before they are land applied, and thereby essentially eliminate the potential (and completely unanalyzed) adverse impacts from those pathogens, the question before the individual SWRCB members and it’s staff, is, “Why *not* limit the GO to only Class A biosolids?” In other words, “Why subject the public and the environment to the potential adverse impacts from the pathogens in Class B?” Is there a compelling reason to justify subjecting the environment and the public to those risks?

L1-2

If there is a valid and compelling reason to *not* limit the GO to Class A biosolids, the Revised EIR fails to set forth that reason. As noted above, the GO is merely that, i.e., a *general* order. As such, a GO that is limited to only Class A biosolids cannot and will not prohibit the land application of Class B biosolids. Such a GO will at most merely encourage the land application of Class A biosolids by making permits for such applications presumably easier to obtain. As also noted above, the Revised EIR appears to completely overlook the availability of individual site-specific permits for any prospective biosolid applier who wishes to land apply Class B biosolids.

As will be discussed in detail below, the Revised EIR suggests that energy, traffic and air quality will be adversely impacted by a Class A only GO, but in addition to overlooking the continued availability of individual site-specific permits for the land application of Class B biosolids, the Revised EIR fails to provide any facts or analysis to substantiate its suggestions that energy, traffic and air quality will in fact be adversely impacted by a Class A only GO. Instead, those suggestions are based on pure speculation and unsupportable assumptions.

↓

Accordingly, given the tremendous and obvious benefit to the public and the environment from “essentially eliminating” the pathogens in biosolids, and given that there is no valid or compelling reason to justify subjecting the public and the environment to the potential adverse short term and long term impacts from those pathogens, at an extreme minimum, *encouraging* the elimination of the pathogens before biosolids are land applied by limiting its GO to only Class A biosolids is the least the individual SWRCB members can do to offer some semblance of protection to the public and the environment from the land application of biosolids. The CDWA strongly recommends and urges both the individual SWRCB members as well as its staff members (to whom the individual SWRCB members will look to for guidance) to so limit its GO.

L1-3

## 2. Food Crop Limitation Alternative.

### a. Why Should the SWRCB limit the GO to non-food crops?

As with the justification for “essentially eliminating” pathogens from the biosolids *before* the biosolids are land applied, the most obvious and compelling reason for the SWRCB’s GO to not authorize the land application of biosolids on crops grown for human consumption (i.e., “non-food crops”) is once again due to the fact that assessments of the potential risk to humans from consuming crops grown with biosolid amended soils *has only been conducted on a tiny handful (i.e., twenty-four (24)) of the chemicals present in biosolids.*<sup>3</sup> *And as noted above, no risk assessment has been conducted on the risk to humans from such consumption with respect to any pathogens, or any of the other over sixty-thousand (60,000) chemicals in biosolids, or any of the altered derivatives of each of those chemicals formed during the various reactions which take place among the various chemicals during the sewage treatment process.*<sup>4 5</sup>

L1-8

What’s worse is that no one, not the EPA, not the SWRCB’s staff, nor the individual SWRCB members can come anywhere close to even *identifying* each and every chemical in biosolids. Compounding the problem is that it is estimated that 1,000 *new* chemicals are added

---

<sup>3</sup> “Only a tiny fraction of the toxicants in sludge have been identified.” (AR XXIV:7302).

<sup>4</sup> See AR XXIV:7372, “Approximately 60,000 chemicals . . . may contaminate sludge . . .”; and AR XXIV:7302 re altered derivatives.

<sup>5</sup> Finally, as Dr. David L. Lewis, a microbiologist for the U.S. Environmental Protection Agency (“EPA”), explains: “[E]verything that you’ll read about tomorrow in the headlines of environmental concerns about this toxic chemical or that toxic chemical, every one of those things is in the sludge, virtually every one, in the sludge you’re applying to the land today and those constituents, those chemical pollutants will be there . . .” (AR XXIV:7389).

to the nation's waste stream each year (AR XXIV:7302) and that, during the sewage treatment process, many of these new and existing chemicals will react with each other forming altered derivatives with can be more harmful and potentially dangerous to the public health (and the environment). (AR XXIV:7302.)

Thus, *even if* the individual SWRCB members and its staff somehow felt comfortable with the adequacy of the risk assessments which purported to analyze the effects on humans from the consumption of food crops grown with biosolid amended soils from those ***twenty-four (24)*** chemicals in biosolids, there is simply no basis whatsoever upon which either the individual SWRCB members or its staff could in good faith and with straight faces conclude that because they are confident that these twenty-four (24) chemicals will not harm humans when they are placed on lands used to grow human food crops, that the same is true for the ***other sixty-thousand (60,000) chemicals plus the tens of thousands of pathogens in biosolids which have not undergone any such risk assessments whatsoever.***<sup>6</sup>

To extrapolate the safety of over sixty-thousand chemicals and pathogens from the risk assessments of twenty-four (24) chemicals is just plain nonsense and extremely unfair to the ultimate consumers of food crops grown with biosolid amended soils, especially pregnant and nursing women, young children, the elderly, and other sensitive and/or immuno-compromised individuals. Dr. Lisk from Cornell University sums it up nicely:

“Currently, it has become common to judge the quality and safety of sludge simply on the basis of its content of a few heavy metals and PCBs. . . . Owing to the galaxy of other potential toxicants of unknown composition and properties in sludge it is pointless to simply make recommendations for sludge use based on its content of a few toxic constituents that are easy to analyze. This is tantamount to judging the state of ones health who may have leprosy and cancer by whether or not they have a sore throat. These few toxicants are merely the tip of the iceberg when it comes to possible toxicants in sludge.” (Ibid). (AR 7302).

The tremendous uncertainty associated with the tens of thousands of unknown and unanalyzed chemicals and pathogens in biosolids and the potential adverse impacts from these chemicals and pathogens on the public and the environment is well-known and well-recognized.

---

<sup>6</sup> Moreover, as the State Board itself recognizes in its EIR, to make matters worse many chemicals can cause adverse effects at extremely minute levels: “A wide range of chemicals, including some in common, often unregulated, undisclosed use are now associated with effects on the health, reproduction, and behavior of animals. . . . [¶] It has been found that some chemicals can cause effects at levels of parts per trillion—levels at which most chemicals have never been tested.” (AR XIII:4224-4225, emphasis added). Similarly, with regard to pathogens, the infectious dose “may be as low as 1 [one] particle (virus) to 50 organisms (Giardia).” (AR VIII:2161).

As the National Research Council recently recognized:

*“[A]dditional scientific work is needed to reduce persistent uncertainty about the potential for adverse human health effects from exposure to biosolids. There have been anecdotal allegations of disease, and many scientific advances have occurred since the Part 503 rule was promulgated. To assure the public and to protect public health, there is a critical need to update the scientific basis of the rule to (1) ensure that the chemical and pathogen standards are supported by current scientific data and risk-assessment methods, (2) demonstrate effective enforcement of the Part 503 rule, and (3) validate the effectiveness of biosolids-management practices.”* (National Research Council. "Biosolids Applied to Land: Advancing Standards and Practices." Washington DC: National Academy Press. 2002, p. 3, emphasis added.)

The “Part 503” rule which the National Research Council is referring is the EPA’s Part 503 sludge regulations adopted in 1993. As the Revised EIR notes, “[The p]rovisions of the [SWRCB’s] GO are based largely on the federal Part 503 regulations . . . .” (AR XIII:3743).

The EPA itself also plainly recognized the uncertainty associated with the land application of biosolids on food crops (and otherwise). As the EPA stated in the preamble of its Part 503 regulations:

“The Agency recognizes that today's rule [i.e., its 503 regs] *may not* regulate all pollutants in sewage sludge that may be present in concentrations that may adversely affect public health and the environment.” (Federal Register, Vol. 58, No. 32, p. 9253, emphasis added). (AR Appendix XII:11701).

As the EPA further explains:

“The scope of the part 503 standards is *necessarily constrained by the adequacy of information* on sewage sludge pollutants and means of use or disposal. However, *rather than wait for more complete information* in order to promulgate all-inclusive regulations, *the Agency is promulgating standards* for those pollutants and use or disposal practices *for which sufficient information exists.*” (Id. at p. 9252, emphasis added). (AR Appendix XII:11700).

There is a very interesting history to why the EPA chose to *not* “wait for more complete information” before it authorized and endorsed the widespread land application of biosolids. However, suffice it to say that the SWRCB is *not* faced with similar political and other pressures and does *not* have to proceed in the wake of this tremendous and undisputed uncertainty. The SWRCB can and should “wait for more complete information,” and, at the very least, for the time being *discourage* the land application of (both Class A and Class B) biosolids for use on

L1-8

lands used to grow crops for human consumption by limiting its GO to only non-food crops.<sup>7</sup>

b. **Why Should the SWRCB *not* limit the GO to non-food crops?**

Given the tremendous and undisputed lack of scientific information and risk assessments to confirm the absence of any potential short and long term adverse impacts on humans from the tens of thousands of unanalyzed chemicals and pathogens in biosolids, there is an obvious and substantial benefit to be derived from the SWRCB's *discouragement* of the introduction of these contaminants into our food supplies by limiting its GO to non-food crops. For the SWRCB to justify, instead, its *encouragement* of the subjection of the public to these unanalyzed risks, there would necessarily have to be a very compelling reason to do so. If there *is* such a reason, the Revised EIR entirely fails to set forth that reason.

L1-8

As noted above, the GO is once again merely that, i.e., a *general* order. As such, a GO that is limited to the use of biosolids on non-food crops cannot and will not prohibit the use of biosolids on food crops. Such a GO will at most merely *discourage* the land application of biosolids on food crops. As also noted above, the Revised EIR appears to completely overlook the availability of individual site-specific permits for any prospective biosolid applier who wishes to land apply biosolids on food crops.

As will be discussed in detail below, as with the Class A Only alternative, the Revised EIR similarly suggests that energy, traffic and air quality will be adversely impacted by a limitation of the GO to non-food crops. But, once again, in addition to overlooking the continued availability of individual site-specific permits for the land application of biosolids on food crops, the Revised EIR fails to provide any facts or analysis to substantiate its suggestions that energy, traffic and air quality will in fact be adversely impacted by a GO which only authorizes land application to non-food crops. Instead, those suggestions are once again based on pure speculation and unsupportable assumptions.

L1-9

Accordingly, given the tremendous and obvious benefit to the public from the avoidance of the introduction of the tens of thousands of completely unanalyzed chemicals and pathogens into our food supplies, and given the lack of any valid and compelling reason to justify subjecting the public to the risks from short term and/or long term exposure to those chemicals and pathogens in its food supplies, at an extreme minimum, the SWRCB should *discourage* the use of biosolids on food crops by limiting its GO to non-food crops. The CDWA strongly recommends and urges both the individual SWRCB members as well as its staff members (to whom the individual SWRCB members will look to for guidance) to so limit its GO.

---

<sup>7</sup> As noted above, the "Class A" and "Class B" designations refer only to the *pathogen* content of the biosolids. Class A biosolids will contain all of the tens of thousands of *non-pathogen* contaminants as are present in Class B biosolids.

### 3. **Alternative Analysis in General.**

CEQA Guidelines section 15126.6, subdivision (d) provides:

“(d) Evaluation of alternatives. The EIR shall include sufficient information about each alternative to allow meaningful evaluation, analysis, and comparison with the proposed project. A matrix displaying the major characteristics and significant environmental effects of each alternative may be used to summarize the comparison.”

Now that the Revised EIR actually has three viable approaches to the land application of biosolids which the individual SWRCB members can actually and legally adopt, some form of matrix or table or chart “displaying the major characteristics and significant environmental effects of each [of those three] alternative[s]” as well as the other “alternatives” would be particularly helpful for the public and the decision makers to evaluate the comparative merits of each alternative. Accordingly, the CDWA urges the SWRCB’s staff and EIR preparers to provide such a matrix, table or chart in the EIR.

L1-10

Moreover, while the Revised EIR has compared the various potential impacts from each of the alternative approaches to the potential impacts from the proposed GO, when it comes to determining the *significance* of any of those potential impacts, CEQA requires that the significance of any particular impact be evaluated in comparison to the “existing conditions,” rather than to the *proposed project* (which appears to have been done in the Revised EIR). (Guidelines, § 15125.) To the extent the Revised EIR has not evaluated the significance of such impacts against the “existing conditions,” the Revised EIR should be corrected and modified to do so.

#### a. **Environmentally Superior Alternative.**

The Revised EIR at page ES-15 states the following:<sup>8</sup>

“The Class A Only and Food Crop Limitation alternatives would avoid the impacts identified for the proposed GO (before mitigation) and have a similar level of impacts to the Modified GO alternative. *However, neither of them is an environmentally superior alternative when compared to the Modified GO. Both the Class A Only and Food Crop Limitation alternatives would have greater levels of impacts with regard to truck traffic, air quality, and energy use. The additional effects would occur as treatment plant operators that are currently land-applying Class B biosolids convert to more energy-intensive Class A*

L1-11

---

<sup>8</sup> Please note that the page references herein to the Revised EIR are to the *hardcopy* of that EIR and not to the electronic version of that EIR which has at times a slightly different pagination.

*treatment or decide to haul biosolids to distant land application or disposal sites.”*

While the Revised EIR’s analysis of the Class A Only and Food Crop Limitation essentially and wrongfully places *no* environmental benefit to “essentially eliminating” pathogens *before* biosolids are land applied (Class A Only alternative) or to entirely removing the tens of thousands of unanalyzed chemicals and pathogens in biosolids from our food supply (Food Crop Limitation), as will be explained in detail below in the comments on the alternative analysis in the Revised EIR, the Revised EIR’s conclusion that “[b]oth the Class A Only and Food Crop Limitation alternatives would have greater levels of impacts with regard to truck traffic, air quality, and energy use” is completely unsupported by facts and analysis and, instead, is based on pure and misinformed speculation.

L1-11

As discussed at the outset of these comments, both the Class A Only and Food Crop Limitation alternatives would provide substantially more superior environmental and public health protection than the Modified GO alternative. The Revised EIR’s conclusions to the contrary are manifestly unsupported, misleading and unfair, and must therefore be corrected and further revised.

#### 4. **Comments on the General Descriptions, Etc. of the Various Alternatives.**

##### a. **Modified GO Provisions and Specifications Alternative.**

Page 14-4 & 14-5. Should include among the listed mitigation measures that are included in the Modified GO Alternative the mitigation measure relating to radioactive materials, i.e., “Mitigation Measure 5-4” (see p. 5-47).

L1-12

##### b. **Class A Only Alternative.**

Page 14-8. The EIR states, “In comparison to Class B biosolids, Class A has reduced nitrogen content. This in turn reduces its effectiveness as a soil amendment.” The EIR should explain this more fully. For example, do all the various methods of producing Class A biosolids reduce the nitrogen content to the same degree? Or do some methods reduce it more than others? How much is it reduced by each method, e.g., what percentage reduction is typical by each method. There are of course different methods to attain Class B biosolids as well. The EIR should likewise explain any variation in the nitrogen levels among these methods and then compare them to each of the Class A methods.

L1-13

Are other non-pathogenic constituents in Class A biosolids similarly *reduced* when biosolids are converted to Class A when compared to Class B? The EIR should explain why or why not, and, which constituents, if any, would be expected to be reduced and the extent of that expected reduction. The EIR should thereafter explain how those reductions impact the environment, either beneficially or adversely.

L1-14

Also, with regard to nitrogen, since under all the proposed alternatives in the EIR all biosolid applications must be limited to the agronomic rate for nitrogen, if Class A biosolids contain less nitrogen per ton than Class B biosolids, does that simply mean that *more* Class A is typically applied to meet the nitrogen needs of the crops? If so, isn't that a benefit to the POTWs who are trying to dispose of as much biosolids as possible, i.e., they can dispose more biosolids per acre using Class A than with Class B? Please explain.

L1-15

Page 14-8. "Restricting the land application of biosolids to Class A will limit the most common current approach to beneficial use. As discussed in Chapter 2, approximately 48% of the total dry tons of biosolids produced in 2001 were land applied. Most of this volume consisted of Class B biosolids."

L1-16

The EIR should set forth the precise percentage of this 48% that is Class A versus Class B. That data should be readily available in the regional water boards records. If that info is not readily available, then the current tracking and monitoring of biosolid land applications throughout the state is woefully lacking.

The following paragraph on page 14-8 should be revised accordingly (or in a substantially similar fashion):

*"Under the Class A Only Alternative, sanitation agencies would have to apply for an individual site-specific waste discharge permit for land application of Class B biosolids, increase the amount of biosolids being treated to meet Class A standards and, thereby, meet the requirements of the GO, perhaps haul Class B biosolids to other states for land application, dispose of the biosolids in landfills or through incineration, or beneficially reuse biosolids via methods other than land application such as using them as an alternative daily cover for landfills. The particular approach chosen by agencies will be driven by a number of physical and economic factors. These include the availability of space in landfills, the potential for increased use of biosolids as landfill alternative daily cover, the feasibility of Class A treatment at existing facilities, costs of alternative treatment, transportation costs, and landfill fees, availability of out-of-state application sites, and the costs associated with applying for and obtaining an individual site-specific waste discharge permit for land application of Class B biosolids."*

L1-17

**c. Food Crop Limitation Alternative.**

Page 14-13. Again at the outset, the EIR should make it clear that the GO is merely a general order which sets forth general waste discharge requirements. An applicant who wanted to land apply biosolids to food crops still has the opportunity to do so via an application for *individual site-specific* waste discharge requirements.

L1-18

- i. Page 14-17. "Under this alternative, the volume of Class B biosolids that could be applied to agricultural land would be substantially reduced. As a



result, a major method of using biosolids would be eliminated and alternative means of dealing with nearly half of the production of biosolids would need to be found.”

It would appear that a reasonable estimate of the amount of wheat grown for human consumption versus that grown for animal consumption could and should be set forth in the EIR. Since wheat makes up 94.3% of the food crops grown with biosolids, such an estimate is critical to support the above-quoted statement on page 14-17.

L1-19

Once again, the GO will merely serve at most to *discourage* the use of biosolids on food crops. *Individual site-specific* permits to place biosolids on food crops can still be sought and ultimately obtained. (See finding #1 of proposed GO).

Furthermore, the GO is not meant to, nor by its terms could it, unravel pre-existing individual site-specific permits. Such permits which authorize placing biosolids on food crops would continue to exist and authorize such placement until those permits expire or are modified.

- ii. Page 14-17. “Under either sub-alternative (a) or (b), farmers who currently accept biosolids for use on non-food crops may be disinclined to continue to do so because the alternative would restrict their future use of the land for food crops.”

Again, any such “disinclination” would only be applicable where the farmer’s current individual site-specific permit expires and that farmer needs to apply for a new permit. But in any event, the farmer can still apply for an *individual site-specific* permit to continue applying biosolids on food crops. Thus, any such disinclination depends on (1) whether or not the farmer needs a new permit to continue applying biosolids on food crops; and (2) how difficult (financially or otherwise) it is for the farmer to seek and obtain an individual site-specific permit in lieu of a permit issued pursuant to the GO. To better inform the public and the decision-makers of any such “disinclination,” the EIR should examine each of these factors and set forth facts and analysis supporting its findings related thereto.<sup>9</sup>

L1-20

- iii. Page 14-17. “Because biosolids are often supplied farmers for free, and chemical fertilizers and amendments are not, this alternative would result in an undetermined economic impact on farmers.”

---

<sup>9</sup> These same factors also similarly relate to the following sentence which immediately follows the above-quoted sentence: “Where biosolids are currently applied to food crops, farmers would have to go back to chemical fertilizers and soil amendments under sub-alternative (a) and would likely to go back to such prior practices under sub-alternative (b).” Such farmers would by no means “have to go back” to anything. It would, at a minimum, depend on the two above-mentioned factors.

It is difficult to pass up the opportunity to note that it is interesting, to say the least, that something touted by some public wastewater treatment operators and others involved in the land application business to be so wonderful for the soil, for farming and for the environment and public health in general is “often supplied [to] farmers for free.” Basic commonsense and basic economic principles would dictate that such a “wonderful” and “beneficial” product would be competitively priced along with other types of commercially available fertilizers and soil amendments, and by no means be given away for free. To all but the most steadfast biosolid proponents, the fact that biosolids are “often supplied to farmers for free” should raise a red flag causing one to question the proclaimed “wonderfulness” and “beneficialness” of biosolids.

L1-20

- iv. Page 14-17 & 14-18. “Further, biosolids provide all or a portion of the fertilizer needs of the fields to which they are applied. Therefore, reduction in their use would result in an increase in the use of chemical fertilizer products, with a resultant potential increase in release of nitrogen to the environment due to chemical fertilizers’ greater nitrogen concentration.”

The EIR should further explain why chemical fertilizer products have the potential to result in an “increase in release of nitrogen to the environment due to [their] greater nitrogen concentration.” Aren’t both biosolids and chemical fertilizers applied at “agronomic rates” which means all the nitrogen is taken up by the crops and not released to the environment? The EIR should compare and contrast the amount of nitrogen which is typically “release[] to the environment” via Class B, Class A and chemical fertilizers, and explain why the expected releases are different among each of them, to the extent they are different.

L1-21

If the amount expected to be released is based on *concentrations*, then does that mean that Class A biosolids which the EIR states have lower concentrations of nitrogen be expected to release *less* nitrogen to the environment than Class B? If so, isn’t that an important benefit to limiting the GO to Class A Only biosolids?

Finally, what does “release to the environment” mean? Release to the underlying groundwater, neighboring surface water drainage ditches or streams or rivers, the air?

- v. Page 14-18. “Possible outcomes . . . .”

One of the listed “possible outcomes resulting from” the GO’s prohibition of applying biosolids on food crops should include the possibility that those farmers wishing to apply biosolids on food crops will seek and ultimately obtain individual site-specific permits authorizing them to do so.

L1-22

- vi. Page 14-18. “Because the Food Crop Limitation Alternative would also preclude the beneficial use of Class A and Exceptional Quality biosolids, there would be little or no incentive to treat biosolids to Class A or

L1-23

Exceptional Quality standards other than for the home market.”

The statement that there would be “little or no incentive . . .” is incorrect. First, “EQ” biosolids are exempted from the GO if the tonnage per acre does not meet the thresholds set forth in finding #1 of the GO. Thus, evading the GO and the prohibitions therein in their entirety would still remain a strong incentive to treat biosolids to “EQ.” Second, Class A and EQ biosolids do not have to meet the runoff, public access and animal grazing restrictions which Class B biosolids must meet. Third, the CDWA believes the GO should be amended to prohibit the land application of Class B biosolids. Accordingly, if such a prohibition is adopted, then the incentive to meet Class A or EQ standards would lie in the desire to obtain a permit pursuant to the “streamlined” general order process, rather than the purportedly more arduous individual-site-specific permit process.

L1-23

vii. **Dedication of Land for surface disposal.**

- (1) Page 14-19. “Although it is a possibility, this approach is unlikely to become a substantial method of disposal because of the cost to sanitation agencies of transportation from treatment facilities and disposal fees.”

The EIR should substantiate this statement by comparing and contrasting these expected costs with the other alternative methods to handle biosolids, such as converting them to Class A, trucking them to distant Class B sites, etc. Why would transportation costs to a dedicated disposal site, for EBMUD or anyone else for that matter, be greater than the transportation costs, for example, of transporting Class B biosolids to farmlands? Is it reasonable to assume that such dedicated sites are further away than available Class B sites (especially taking into consideration the various local bans and restrictions on the land application of Class B biosolids)? What are the annual costs for the other dedicated surface disposal sites listed in the EIR (i.e., other than EBMUD)? And how does the distance to these sites compare to the distances to available Class B application sites?

L1-24

viii. **Landfilling/Alternative Daily Cover Use.**

- (1) Page 14-19.

The following sentence (or something substantially similar) should be added to the following sentences such that it reads as follows:

This is called “daily cover.” Biosolids buried in landfills are simply treated as solid waste; biosolids used for landfill cover are used in landfill operations which is considered beneficial use. *Since the use of biosolids for landfill cover is considered a beneficial use, such use serves as a means for jurisdictions to meet their requirements to increase the beneficial use of their generated wastes and*

L1-25

*thereby reduce the amounts of generated wastes that are “disposed” in landfills (as required by Pub. Resources Code, § 41780.2).*

At the outset it should be noted that at least on its face the use of biosolids as an alternative daily cover (“ADC”) appears to be a far superior alternative to the land application of biosolids both environmentally and economically. For example, the use of biosolids as an ADC would share the same environmental benefits which the EIR recognizes would result from the direct *disposal* of biosolids in landfills, plus such use of biosolids constitutes a “beneficial reuse” of the biosolids and, thus, as just mentioned, helps jurisdictions minimize the amounts of generated wastes disposed in their landfills.

Some of the environmental benefits which the EIR recognizes would result from the direct *disposal* of biosolids in landfills which would also be achieved thru the beneficial reuse of biosolids as an alternative daily cover include the following:

“With these materials going to landfills, monofills, or incinerators, *the potential for water quality effects would be reduced*. Landfills and monofills are strictly regulated for contamination of surface water and groundwater. Most of these facilities have natural or manufactured liners that catch leachate, or they have extensive leachate collection systems that minimize percolation of contaminants to groundwater. Newly developed landfills or monofills would be expected to include state-of-the-art leachate control systems.” (AR 3995). (Emphasis added).

“Under the Land Application Ban Alternative, *adverse crop and soil productivity impacts* associated with changes in soil nutrient levels and changes in heavy metal plant toxicity resulting from the application of biosolids *would not occur*. Additionally, *public concerns over crop contamination* from biosolids applications *would not occur* under this alternative.” (*Ibid.*). (Emphasis added).

“Under this alternative, *there would be no risk of human or animal disease from the land application of biosolids in agricultural, horticultural, silvicultural, or land reclamation settings*. Land application would be discouraged and the pathogens and other contaminants in *biosolids would not be placed in settings with a significant risk of public exposure*. . . . [Landfills] generally have strict[] control on public access, so *the potential for direct human contact would be substantially reduced*.” (AR 3996). (Emphasis added).

As noted below, an increased use of biosolids as an alternative daily cover could very well be the most likely result from a SWRCB GO that *discourages* the land application of Class B biosolids and the land application of biosolids on to food crops. As also noted below, the Revised EIR’s prediction that the use of biosolids as an ADC under the Class A Only and Food Crop Limitation alternatives “is unlikely to increase substantially” is completely unsupported by facts and analysis. (Revised EIR, p. 14-20.)

L1-25

- (2) Page 14-20. “There are approximately 161 landfills in operation within California (CIWMB 2003a). Of these, approximately 60 are permitted to accept biosolids (CIWMB 2003a). However, anecdotal evidence indicates that the number of landfills accepting biosolids is less than the number permitted to accept biosolids.”

Given the extensive regulation of landfill sites it difficult to imagine that “anecdotal evidence” must be relied upon to assess how many landfills within the state accept biosolids. Such information should be readily available and the EIR should provide actual data, and not rely on “anecdotal evidence” and extrapolations therefrom.

The EIR should also clarify throughout this discussion whether it is referring to the “disposal” of biosolids or the “beneficial reuse” of biosolids as an alternative daily cover. Out of the 161 landfills in operation within the state, how many are permitted to accept biosolids for “disposal” and how many are permitted to accept biosolids for “beneficial reuse” as an alternative daily cover? Upon review of the available data and records, how many of the landfills that are permitted to accept biosolids for “disposal” are currently disposing of biosolids; and how many of the landfills that are permitted to accept biosolids for “beneficial reuse” are currently “beneficially reusing” biosolids?

- (3) Page 14-20. “For example, only 1 of the 6 landfills in Orange County permitted for biosolids disposal actually accepts biosolids . . .”

The EIR should explain why that is so (and again clarify whether this is referring to accepting biosolids for disposal or beneficial reuse, or both)? Why aren’t these landfills accepting biosolids for disposal and/or beneficial reuse?

- (4) Page 14-20. “. . . 4 of the 16 southern California landfills permitted to accept biosolids have available capacity (Baroldi Pers. Comm; Tetra Tech 2003).”

Presumably this is referring to “available capacity” for the *disposal* of biosolids and not the beneficial reuse of biosolids? What is meant by “available capacity?” Are the other 12 landfills maxed-out and full, and thus no longer operable? If not, please explain how a landfill can have available capacity for waste, yet *not* have available capacity for biosolids?

- (5) Page 14-20. “The landfilling of biosolids is costly for biosolids producers in that it requires the transportation of biosolids to landfills and the payment of tipping fees.”

Presumably this is also referring to the cost of “disposing” of biosolids, rather than “beneficially reusing” them as an alternative daily cover? How does the transportation cost to

L1-25

landfills compare with the transportation costs to land application sites? According to the EIR biosolids are transported “considerable distances” by truck for land application:

“Most of the biosolids being reused in California are generated in the Los Angeles and Orange County areas, as well as in the other large urban centers of the state (San Diego, the San Francisco Bay Area, Sacramento). *Much of this material is transported a considerable distance by truck for land application.* The counties supporting the largest amounts of biosolids reuse are ~~Kern, Kings,~~ Merced, San Diego, Riverside, and Solano.” (EIR, p. ES-5, emphasis added.)

“While the number of out-of-state truck trips is increasing, so is the length of trip. As an example of the distance that biosolids are being transported, one Southern California biosolids producer is currently hauling Class B biosolids from 290 to 370 miles one-way to land application sites in Arizona and Nevada. In contrast, when agricultural sites were available in Kern and Kings Counties, the one-way trip was approximately 200 miles or less (Baroldi 2003).” (EIR, p. 14-37.)

After comparing and contrasting the transportation costs between landfilling and land application, the EIR should also factor in the “tipping fees” for disposal in landfills and add those fees in the comparison between the costs of land application versus the costs of landfilling.

L1-25

- (6) Page 14-20. “The number of landfills accepting biosolids in proximity to urban areas is very limited, so transportation costs would be substantial.”

How does the EIR define “proximity to urban areas” for purposes of this statement? And *why* is the number of landfills accepting biosolids (presumably for “disposal”) in proximity to urban areas “limited?” Why aren’t more landfills in proximity to urban areas accepting biosolids for disposal?

In the end, the EIR must provide the requisite facts *and* analysis to support its conclusion that “[l]andfilling of biosolids would be unlikely to increase substantially as a result of the Food Crop Limitation Alternative because of these limiting costs.” Thus far, neither the public nor the decision makers have been provided with adequate information to independently arrive at that conclusion.

- (7) Page 14-20. “Biosolids are being applied as alternative daily cover in only 15 of the state's landfills (CIWMB 2003b). Because biosolids are limited to 25 percent of the daily cover, and only a small number of landfills will accept biosolids for this use, this means of beneficial use is unlikely to increase substantially.”

The EIR should explain in detail why only 15 out of the 161 landfills throughout the state

currently apply biosolids as an alternative daily cover. For example, to what extent is the low number of landfills utilizing biosolids as an ADC due to the fact that such use was only fairly recently deemed a beneficial reuse, and not a “disposal” of waste in landfills, (i.e., in approx. 1996) and, thus, deemed a credit towards jurisdictions’ mandatory goals of reducing the amount of wastes *disposed* in landfills? (See Pub. Resources Code, § 41781.3.) Is there widespread opposition to the use of biosolids as ADC, on the local front or otherwise? Are counties banning or restricting such use as they are with regard to the land application of biosolids?

How many landfills in the state are *currently permitted* to use biosolids as an ADC (whether they actually do use them for ADC or not)? For those that are not so permitted, what must be done to secure the appropriate permits, e.g., changes in landfill operations, filing for a permit? (See EIR, p. 14-21, “Use of biosolids as alternative daily cover material is *not* expected to substantially change existing operations or impacts at landfills.” [Emphasis added].) How difficult is it financially or otherwise to obtain approval to beneficially reuse biosolids as ADC?

Importantly, how do the financial costs of using biosolids for ADC compare to switching to Class A biosolids, land applying Class B biosolids out-of-state or even great distances within the state, disposing of biosolids in a dedicated biosolids disposal site, and simply “disposing” of them in landfills? To properly address this question, the EIR once again must survey and assess the various distances from the various biosolid processing facilities and the landfills and compare them with the distances traveled to land application sites, etc.

The EIR suggests that since biosolids “are limited to 25 percent of the daily cover,” that somehow that percentage is *not* significant and is a drawback of using biosolids as an ADC. If all 161 landfills were to use biosolids as 25 percent of their daily cover, what percentage of the state’s total daily or annual biosolid production could be beneficially reused by this method? Same question assuming one-half of the landfills in the state were to so use biosolids? Same question if all the landfills that are *currently permitted* to use biosolids as ADC were to so use them?

As it stands, the EIR’s above-referenced conclusion that the beneficial reuse of biosolids as ADC “is unlikely to increase substantially” if the food crop alternative (or Class A Only alternative) were adopted is not supported by sufficient facts or analysis.

Since all the landfills in the state must place a 6 inch daily cover of material over their landfills, using biosolids for 25% of that daily cover would not only *entirely avoid* every identified potentially significant from the proposed GO, but also would preserve the amount of otherwise good quality dirt that must be utilized on a daily basis to provide the 6 inch daily cover.

If there are significant drawbacks for more, if not all, landfills in the state to use biosolids as an ADC, then the EIR should thoroughly discuss them in detail with supporting facts and analysis to justify the EIR’s conclusions.

L1-25

Logically, a general order which was limited to Class A biosolids and application to non-food crops would tend to *encourage* other beneficial reuse options such as ADC. As a result, use of biosolids as ADC would, contrary to the EIR's conclusion, be expected to substantially *increase*, and be preferred over other non-beneficial reuse options such as pure "disposal" in landfills or dedicated sludge disposal sites, etc. Again, the EIR has fallen far short of supporting its conclusion that the opposite would be true.

L1-25

- (8) Page 14-20. "Given the volume of Class B biosolids that would be affected by this alternative [i.e., the Food Crop Limitation Alternative], transport to other states would be likely to become much more common." (EIR, p. 14-20.)

Again, as noted above, the "volume of Class B biosolids that would be affected by" the Food Crop Limitation Alternative has not been properly evaluated and/or determined. In any event, as the EIR notes, local jurisdictions in Arizona are beginning to recognize the impropriety of land applications, and, thus, other beneficial reuse options such as using biosolids as ADC in local landfills would be expected to become much more common than trucking biosolids hundreds of miles to neighboring states.

- (9) Page 14-21. "Traffic and related vehicle emissions would increase along routes to out-of-state application lands. Long-distance traffic would increase on major highways to Nevada and Arizona."

To the extent traffic and related vehicle emissions would in fact incrementally increase along routes to out-of-state application lands if the Food Crop Limitation alternative was selected, there would thus be a corresponding *decrease* in traffic and related vehicle emissions along routes to wherever the biosolids would be land applied if the proposed GO or Modified GO were adopted. The EIR should take this decrease into consideration and assess the *net* impact or benefit on traffic and related vehicle emissions.

L1-26

- (10) Page 14-21. "This relocates this traffic and approximately doubles the miles traveled per haul."

Where does the "approximately doubles the miles traveled per haul" figure come from? Before any such estimated increases in miles traveled can be meaningfully made, the EIR must have some idea where biosolids would be land applied on food crops if the proposed GO or Modified GO (or even Class A Only) alternatives were to be adopted. Once those areas and travel distances are determined, then the EIR must determine where biosolids will be land applied if the Food Only Alternative were to be adopted, and compare the distances. Assuming *arguendo* that jurisdictions *will* in fact truck more biosolids to Nevada and Arizona, in lieu of other disposal or beneficial reuse options, if the Food Only Alternative was chosen than would be the case if some other alternative was chosen, as it stands there are no facts or analysis to support a finding that such truck transportation out of state will actually result in an *increase* in "miles

traveled per haul,” much less result in “approximately double the miles traveled per haul.” Such transportation out-of-state, could very well involve shorter distances than trucking biosolids to the steadily dwindling number of counties within California that are willing to accept the biosolids.

- (11) Page 14-21. “Overall, including traffic in Nevada and Arizona, the traffic impact would be more severe than the proposed GO. The impact would be less-than-significant.”

Again, assuming truck traffic *increases* at all to and from Nevada and Arizona as a result of the Food Only Alternative, the “overall” traffic impact must take into consideration the corresponding *decrease* in traffic *within* California resulting from the shift from delivery routes to and from sites within California to delivery routes to and from Nevada and Arizona. Thus far, it appears the EIR’s “overall” assessment of traffic impacts overlooks this corresponding decrease.

- (12) Page 14-21. “Increased truck traffic through the South Coast and Mojave air basins would result in increased emissions. The cumulative impact of this approach on air quality would be considerable.”

The statement that the “cumulative impact of this approach on air quality would be considerable” needs clarification. What is meant by “considerable?” For example, elsewhere in the EIR, the EIR concludes that increased emissions from increased truck traffic *will not* result in any significant individual or cumulative impacts. See for example the following passages from the EIR:

Individual air districts classified as nonattainment areas for the state or federal ozone or federal PM10 ambient standards are required to prepare state implementation plans (SIPs) and air quality management plans (AQMPs) showing how they will come into compliance with the ambient standards. Those plans include emission budgets for vehicles and nonvehicular sources. Emissions from heavy-duty vehicles, including biosolid transport vehicles, are included within the emission budgets prepared as part of ozone and PM10 AQMPs. Emissions from farm activities, including off-road vehicle travel and wind-blown dust, are also included in the emission budgets of those plans (O’Bannon pers. comm.). Consequently, both on-road and off-road vehicular emissions associated with biosolids application projects are included in the emission budgets in the applicable air quality plans. *Because those plans describe the measures that would be used to attain the ambient standards, no additional mitigation measures are needed and the proposed project is considered to have less-than-significant air quality impacts from on- and off-road vehicle emissions.* Mitigation Measure: No mitigation is required. (EIR, p. 10-7, emphasis added.)

L1-26

**“Impact: Cumulative Increase in NOx and PM10 Emissions**

The proposed project could result in an increase in NOx and PM10 emissions resulting from transport of biosolids from POTWs to land-application sites and from the use of farm equipment to spread and incorporate biosolids into the soil during land application operations. Land application of biosolids is expected to increase over the next 15 years as the population increases. Increases in air quality emissions resulting from the project would be greatest in Kern, Kings, Merced, San Diego, Riverside, and Solano Counties, where the greatest amount of land application occurs. Other land development projects, industrial projects, and the increase in air quality emissions resulting from activities associated with population growth would also contribute to an increase in air quality emissions. Air districts in non-attainment regions will be required to implement agriculture control measures to regulate NOx and PM10 under SB 700 (Chapter 479, Statutes of 2003), however, the contents of these requirements are not yet known (California Legislation 2003). *Air quality management plans (AQMPs) include policies to reduce air emissions from industrial operations, auto and truck exhaust, increases in population, and other activities that could result in increased air emissions. This cumulative impact is considered less than significant because AQMPs include policies aimed at reducing vehicle emissions (such as those that would be generated by implementation of the GO) and direct air quality impacts would be reduced to a less-than-significant level with implementation of Mitigation Measures 10-1 and 10-2.*” (EIR, p. 13-6, emphasis added.)

L1-26

Accordingly, based on the EIR’s rationale set forth in these passages, neither the individual or cumulative air quality impacts from the Food Crop Limitation alternative will be “significant” since the AQMPs will presumably ensure that there will not be any significant impacts. If the EIR seeks to continue to rely on this rationale elsewhere in the EIR, then it should also consistently apply it to the new Food Crop Limitation and Class A Only alternatives.

**5. Comments on the “Impact Comparisons” of the Various Alternatives.**

At the outset, the Revised EIR should add a “cumulative impact” section in this portion of the EIR to *all* of the “alternatives” to the proposed GO, not just to the two new alternatives, i.e., the Class A Only and Food Crop Limitation alternatives.

L1-27

**a. Class A Only Alternative.**

- i. Page 14-34. “The Class A Only Alternative is compared to the proposed GO, before mitigation. Because it incorporates a number of mitigating features, this alternative would result in less severe impacts than the proposed GO in several areas. This alternative would result in more severe impacts than the proposed GO in the areas of traffic, air quality, and

L1-28

energy consumption.”

The EIR’s conclusion that “this alternative would result in more severe impacts than the proposed GO in the areas of traffic, air quality, and energy consumption” is entirely unwarranted and entirely unsupported.

ii. **Energy Impacts.**

- (1) Page 14-34. “Increased energy consumption when compared to the proposed GO is related to two factors: increased energy needs of Class A biosolid treatment, and increased fuel needs related to longer truck trips. The technology for treating biosolids to Class A standard generally requires a substantially greater energy input (for heating, turning, aeration/air transfer, etc.) than is necessary to reach Class B standards. As discussed below under traffic, the Class A Only Alternative would result in longer truck trips because Class B land application sites would be available only in other states.”

These findings are fundamentally flawed since they make several unwarranted and unsupportable assumptions. In essence, these findings are purely speculative and not based on facts or analysis.

The first unwarranted and unsupportable assumption is the assumption that a general order which only applies to Class A Only biosolids *will in fact result* in more treatment of biosolids to Class A standards. That is pure speculation at best. As discussed above, the EIR thus far entirely overlooks the fact that *individual site-specific* can and most likely will be obtained by anyone still desiring to land apply Class B biosolids. The extent to which a General Order that is limited to Class A biosolids will in fact discourage *individual site-specific* permits to land apply Class B biosolids has thus far not been addressed or assessed at all.

Second, even assuming *arguendo* that the Class A Only alternative will in fact actually discourage new Class B land applications within California, it is also pure speculation at best that the discouragement will result in more treatment of biosolids to Class A standards in lieu of other alternatives to handling Class B biosolids. The most obvious and potentially promising use for Class B biosolids would be to beneficially reuse them as an alternative daily cover for landfills. Class B biosolids could also of course be “disposed” in landfills, dedicated sludge disposal sites, incinerated, etc. Thus far, there is absolutely no facts and analysis to support the conclusion that a discouragement of Class B land applications will result in the production of more Class A biosolids, in lieu of other handling options for Class B biosolids.

Third, the EIR notes that Class B land applications have dropped considerably in California in response to the various County bans against the land application of Class B

L1-28

biosolids. This trend will seemingly continue regardless of the nature of the SWRCB's GO, i.e., it's being strongly influenced by local counties' regulations, *not* by the SWRCB's GO. In order for the EIR to conclude that the SWRCB's GO will result in a shift to increased Class A treatment, the EIR must separately identify the GO's *incremental* effect on the current trend towards a reduction in Class B land applications. Again, since persons can still obtain individual, site-specific permits to land apply Class B biosolids within California regardless of what the general order allows, it is by no means clear that a Class A Only GO would have *any* effect on the current land application of Class B biosolids, must less result in more POTWs electing to treat their biosolids to meet Class A standards. All of this is pure, unsupportable speculation.

In any event, the EIR also notes elsewhere that Class A biosolids tend to weigh less due to their lower water content, thus, less truck traffic, and, hence, energy would be required to transport Class A biosolids. That fact is inappropriately left out of this discussion.

Fourth, with regard to increased "traffic" and the related impacts therefrom, the EIR states, "As discussed below under traffic, the Class A Only Alternative would result in longer truck trips because Class B land application sites would be available only in other states." For all the above reasons, this finding is also pure speculation and entirely unsupported. Why would "Class B land application sites . . . be available only in other states?" That's 100% incorrect. What is limiting Class B land application sites in California is *local county restrictions*. A Class A Only GO would *not* and *could not* limit Class B land applications within California. At most, such a GO would *encourage* Class A land applications in lieu of Class B land applications, but, again, the extent of any such *encouragement* is purely speculative and thus far completely unevaluated in the EIR. Also, a finding that a discouragement of Class B land applications (assuming such discouragement would exist) would push more biosolids to out-of-state land application sites in lieu of pushing more Class B biosolids toward alternative handling methods, e.g., alternative daily covers, is also completely unsupported by the requisite facts and analysis necessary to make such a finding.

Furthermore, as also discussed above, there has been no analysis whatsoever to support a finding that travel distances to Class B sites within California (even under the Modified GO Alternative which would purportedly *encourage* Class B applications within California), given the numerous local county restrictions, would be any closer than available sites in neighboring states. Again, what the evidence in the EIR shows are influencing the distances to available Class B sites in California are the local county restrictions, not the SWRCB's GO.

For example, the following passage in the "Traffic" impact section on page 14-36 highlights this fallacy in the EIR's analysis:

"While the number of out-of-state truck trips is increasing, so is the length of trip. As an example of the distance that biosolids are being transported, one Southern California biosolids producer is currently hauling Class B biosolids from 290 to

L1-28

370 miles one-way to land application sites in Arizona and Nevada. In contrast, *when agricultural sites were available in Kern and Kings Counties*, the one-way trip was approximately 200 miles or less (Baroldi 2003).” (Emphasis added.)

The comparison of distances should *not* be to sites that “were available in Kern and Kings Counties,” rather, the comparison must be to sites that *are* available somewhere within California. Again, presumably, biosolid producers are transporting biosolids to neighboring states because it is closer and/or cheaper than transporting biosolids to areas in California that are willing to accept biosolids. We need to know how far biosolids producers must transport Class B biosolids to areas that are willing to accept them within California. Thus far, the EIR completely lacks any such information. Furthermore, in any event, as noted above, any increased distances to available Class B sites within or without of California are driven by local county restrictions on Class B biosolids *not* the nature of the SWRCB’s GO.

iii. **Traffic Impacts.**

- (1) Page 14-36. “While the number of out-of-state truck trips is increasing, so is the length of trip. . . . This outcome would be expected when the cost of Class A treatment exceeds the cost of Class B treatment plus the cost of transport out of California.”

In addition to everything else that has been said about the numerous, unsupportable assumptions embedded in this finding, before the EIR can fairly and reasonably suggest that increased trucking trips and distances “would be expected” to result from the adoption of the Class A Only alternative, the EIR must provide a meaningful analysis of the various costs associated with Class A treatment, using biosolids as an alternative daily cover, disposing biosolids in land fills, etc. *and then compare and contrast* those costs with the “cost of Class B treatment plus the cost of transport out of California.” The EIR simply assumes without any facts or analysis or any such comparison that it is less expensive to land apply biosolids out of state than, for example, to use them locally as an alternative daily cover in the local and nearby landfills.<sup>10</sup>

- (2) Page 14-36. “If the application of Class B biosolids is *essentially prohibited* in California, sanitation agencies can be expected to

---

<sup>10</sup> As the court explains in Santiago County Water Dist. v. County of Orange (1981) 118 Cal.App.3d 818, 831: “*The EIR must contain facts and analysis*, not just the bare conclusions of a public agency. An agency’s opinion concerning matters within its expertise is of obvious value but the public and decision-makers, for whom the EIR is prepared, should also have before them the basis for that opinion so as to enable them to make an independent, reasoned judgment.” (Emphasis added).

continue to increase the dry tonnage of biosolids that are being transported out-of-state.” (Emphasis added.)

As discussed extensively above, if the Class A Only Alternative is adopted, Class B biosolids will *not* in any manner be prohibited.

- (3) Page 14-36. “Although the impact cannot be quantified by number of trips per east-west highway because the origins and ends of the trips are various, *overall the substantially longer truck hauls from producer to application site and the increasing number of these truck trips can reasonably be assumed to result in a more severe impact than under the proposed GO.* However, the impact would still be less than significant.”

“More severe [traffic] impact” where? On the routes to and from out-of-state sites? In the paragraph immediately above, the EIR notes that under its assumptions, traffic will *decrease* on other routes to and from sites within California. To conclude that the *net* outcome or “overall” outcome will be “more severe” if more out-of-state traffic increases, the EIR must assess in much greater detail the current traffic situation in out-of-state routes and compare that with the current traffic situation in routes within California. Perhaps the “within California” routes are more congested than the out-of-state routes and, thus, the overall traffic is *less severe* if traffic is shifted to the out-of-state routes since the out-of-state routes can handle the increased traffic. Once again, the EIR has come nowhere close to providing the requisite facts and analysis to support its suggestion that traffic will be “more severe” under the Class A Only Alternative.

L1-28

iv. **Air Quality Impacts.**

- (1) Page 14-37. “The additional cost of Class A treatment, in comparison to Class B treatment, may lead to an increase in the amount of Class B biosolids being trucked out-of-state for beneficial use. Overall, additional truck traffic on southern routes to Nevada and Arizona would incrementally increase air emissions. The Class A Only Alternative would have a more severe impact than the proposed GO. Overall, the impact would be less than significant with the mitigating features incorporated into this alternative.”

Since this finding that the Class A Alternative will have a “more severe impact” than the proposed GO on air quality is tied to the alleged increase in trucking of Class B biosolids to out-of-state sites for land application, this finding suffers from all of the above deficiencies related to the alleged increased trucking discussed above.

v. **Cumulative Impacts.**

- (1) Page 14-37. “The Class A Only Alternative would result in greater contributions than the proposed GO to cumulative effects on traffic, air quality, and energy consumption. Increased truck traffic on major roads between southern California and land application sites in Nevada and Arizona will make a cumulatively considerable contribution to traffic impacts. This alternative would make a cumulatively considerable contribution to air quality impacts (ozone precursors and particulate matter) related to truck emissions in the South Coast and Mojave air basins. This alternative would also contribute to energy consumption as a result of the more energy-intensive technology necessary to treat biosolids to Class A standard, in comparison to the energy level necessary for Class B treatment.”

These findings regarding “cumulative impacts” merely repeat and rely upon the fallacious and unsupported conclusions discussed at length above (i.e., they rely on the threshold assumption that the Class A Only alternative will in fact result in greater contributions than the proposed GO to cumulative effects on traffic, air quality, and energy consumption; an assumption that entirely lacks supporting facts and analysis, and is at best purely speculative.)

L1-29

These findings, however, introduce the concept of “cumulatively considerable” impacts. While the EIR earlier concludes that none of these impacts will be *individually* significant or individually “considerable,” presumably the EIR has reason to believe that when the incremental, individual impacts from the Class A Only alternative are “viewed in connection with the effects of past projects, the effects of current projects, and the effects of probable future projects . . .” (CEQA Guidelines, § 15130, subd. (b)), the overall or resulting cumulative impact will be “considerable.” If the EIR preparers sincerely believe that is the case, the EIR has once again entirely failed to provide any facts or analysis to support that finding. The EIR simply comes nowhere close to substantiating that conclusion.

This four-sentence cumulative impact analysis is fraught with deficiencies. First, as just noted, its conclusions are purely speculative and unsupported. Second, nearly all of the mandatory elements “necessary to an adequate discussion of significant cumulative impacts” required by Guidelines section 15130, subdivision (b), are absent. For example, where are any of the following necessary elements:

“(1) Either:

(A) A list of past, present, and probable future projects producing related or cumulative impacts, including, if necessary, those projects outside the control of the agency, or

(B) A summary of projections contained in an adopted general plan or related planning document, or in a prior environmental document which has been adopted or certified, which described or evaluated regional or areawide conditions contributing to the cumulative impact. Any such planning document shall be referenced and made available to the public at a location specified by the lead agency.

(2) When utilizing a list, as suggested in paragraph (1) of subdivision (b), factors to consider when determining whether to include a related project should include the nature of each environmental resource being examined, the location of the project and its type. Location may be important, for example, when water quality impacts are at issue since projects outside the watershed would probably not contribute to a cumulative effect. Project type may be important, for example, when the impact is specialized, such as a particular air pollutant or mode of traffic.

(3) Lead agencies should define the geographic scope of the area affected by the cumulative effect and provide a reasonable explanation for the geographic limitation used.

(4) A summary of the expected environmental effects to be produced by those projects with specific reference to additional information stating where that information is available, and

(5) A reasonable analysis of the cumulative impacts of the relevant projects. An EIR shall examine reasonable, feasible options for mitigating or avoiding the project's contribution to any significant cumulative effects.”

For example, the Revised EIR states, “Increased truck traffic on major roads between southern California and land application sites in Nevada and Arizona will make a cumulatively considerable contribution to traffic impacts.” Some of numerous questions that must be thoroughly addressed include the following: *Why* will it be cumulatively considerable? Is the traffic already a major problem? What past, current and future projects is the Revised EIR taking into consideration? Is there no way to mitigate or avoid the traffic impacts alleged to result from the Class A alternative such that the impacts will *not* be cumulative considerable? Couldn't the trucks be required by either the SWRCB or some other entity with jurisdiction over traffic and air quality in the areas of concern to travel at non-peak times or even use alternative routes? Thus far none of these obvious types of questions have been addressed or evaluated.

Third, there is no discussion whatsoever of Guidelines section 15130, subdivision (a)(3), which provides:

“An EIR may determine that a project's contribution to a significant cumulative

L1-29

impact will be rendered less than cumulatively considerable and thus is not significant. A project's contribution is less than cumulatively considerable if the project is required to implement or fund its fair share of a mitigation measure or measures designed to alleviate the cumulative impact. The lead agency shall identify facts and analysis supporting its conclusion that the contribution will be rendered less than cumulatively considerable.”

Again, this relates to the potential for the mitigation of any perceived cumulatively considerable impacts. And once again, there is no description of potential mitigation measures or analysis of the feasibility of implementing any such measures.

Fourth, there is no discussion whatsoever regarding why the measures identified in Chapter 13 of the EIR relating to the cumulative impact analysis of the *proposed GO*, will not also be adequate to render the cumulative impacts from the *Class A Only* alternative to a less-than-significant level.

For all of these reasons, the Revised EIR’s cumulative impact analysis of the Class A Only alternative is grossly inadequate and in dire need of further discussion and the presentation of supporting facts and analysis.

**b. Food Crop Limitation Alternative.**

- i. Page 14-38. “Because it incorporates a number of mitigating features, the Food Crop Limitation Alternative would result in less severe impacts than the proposed GO in several areas. *This alternative would result in more severe impacts than the proposed GO in the areas of traffic and air quality.*” (Emphasis added.)

As with the Class A Only alternative, the Revised EIR similarly concludes that the SWRCB’s adoption of the Food Crop Limitation alternative will also result in “more severe impacts” in the areas of traffic and air quality than the proposed GO. Since the same reasons discussed in detail above that the Revised EIR’s conclusions regarding this impacts from the Class A Only alternative on traffic and air quality are entirely unsupported and unwarranted are also applicable to the Revised EIR’s conclusions regarding the Food Crop Limitation alternative, those reasons will not repeated and the reader is hereby referred to those reasons set forth above.

The same is true with the Revised EIR’s conclusion that adoption of the Food Crop Limitation alternative would result in “cumulatively considerable” impacts to traffic, air quality, as well as energy consumption. These conclusions are also entirely unsupported and unwarranted for the reasons discussed above with respect to these same conclusions with regard to the SWRCB’s adoption of the Class A Only alternative.

- ii. Page 14-39. “Public Health. Although there is no evidence that the

L1-29

L1-30

L1-31

application of Class A, Class B (with restrictions), or Exceptional Quality biosolids results in creation of a public health risk . . . .”

This clause should be deleted. Perhaps it was intended to be limited to public health risks from consuming food products grown on biosolid application sites. Even so, the clause should still be deleted.

While the CDWA could go on for volumes explaining why the land application of these types of biosolids do in fact create a public health risk (some of those reasons were set forth above in the beginning portion of these comments), it is safe to assume that the EIR preparers are well aware of the public health risks associated with such land applications. Even if the EIR preparers were 100% confident that such applications pursuant to the Modified GO alternative (or even existing individual site specific permits) eliminated any possibility of harm to the public or the environment from the land application of biosolids (a completely unreasonable and absurd position to take), there is always the real and unavoidable potential that the detailed requirements set forth in the GO or permit will not be complied with for various reasons, e.g., human negligence, mother nature, etc. The debate however surely is not and cannot be whether there is *any* risk. Rather the debate, if any, could only be what *amount* of risk should the individual SWRCB board members force the public and the environment (and especially those individuals and organisms living, working and/or recreating in the vicinity of the application sites) to tolerate and endure. Accordingly, this unfair, disingenuous and misleading statement should be deleted.

L1-31

As noted in the beginning portion of these comments, without being able to even identify each and every contaminant and pathogen in biosolids, much less having thoroughly evaluated the potential short and long term effect each and every one of those contaminants and pathogens would have on humans who consume food crops grown with soils that were amended with those contaminants and pathogens, if the EIR preparers and the SWRCB staff members truly believe there is *no* “public health risk” associated with the land application of biosolids to food crops, then it would be greatly appreciated if the EIR preparers and/or the SWRCB staff members can explain in detail and provide the requisite facts and analysis upon which they are relying for that belief.

**6. Additional Misc. Comments on the Revised EIR.**

- a. Page 2-5. “Given that biosolids generation will increase substantially along with the state’s population, it is clear that the demand for land application sites will increase as well.”

The sentence is directly inconsistent with the immediately preceding sentences which state the following:

“Reuse and disposal practices in California have changed over the years, as can be

L1-32

seen in the differences between the 1988 and 1998 CASA surveys. Consequently, it is difficult to predict how the additional biosolids generated in California will be used and disposed of in the future. The costs of all treatment and disposal options are likely to increase as land values and regulatory controls increase. The future disposal destinations of biosolids will also be affected by available space in landfills, public perception and government policies toward acceptable uses of biosolids, and new information developed by the scientific community.”

↑  
L1-32

Thus, for all of these reasons it is anything but clear that “the demand for land application sites will increase.” The demand for land application sites could just as easily substantially (continue to) *decrease* as it has been in recent years.

b. Page 4-15.

The Revised EIR should explain the basis for making the various modifications to mitigation measure 4-3 re “Track and Identify Biosolids Application sites.”

L1-33

c. Page 5-9 and 5-10.

Upon reading the new additions of information on these pages, the impression is given that the year 2003 University of Arizona study by “Rusin” somehow negates the concerns and findings in the prior year 2002 University of Georgia study by “Lewis.” That is most certainly not the case and the text should be clarified to reflect that such is not the case and make it clear that the conclusion of the “Lewis” study is *not* focused on the presence of *S. aureus* in biosolids, but rather is the following, which is *not* in any manner refuted by the “Rusin” study or any other study:

“When assessing public health risks from applying sewage sludges in residential areas, potential interactions of chemical contaminants with low levels of pathogens should be considered. An increased risk of infection may occur when allergic and non-allergic reactions to endotoxins and other chemical components irritate skin and mucous membranes and thereby compromise normal barriers to infection.” (See Exhibit “A” attached hereto at p. 1.)

L1-34

Once the “normal barriers to infection” are compromised from the chemical contaminants in biosolids, an infection can occur from many sources, including, but not limited to, the biosolids themselves.

d. Page 5-27. “Safe Drinking Water and Toxic Enforcement Act (Health and Safety Code Section 25249.5). “Perhaps the most important long-term regulatory standards that govern biosolids are the Safe Drinking Water standards that apply to both surface and groundwaters which are used for public water supplies. Groundwater quality protection is one of the key areas of concern and the GO

L1-35  
↓

contains a prohibition against causing these standards to be exceeded as a result of biosolids land application. P. 5-27.

The EIR should fully explain in detail how members of the public, as well as the SWRCB's staff and other regulatory agencies, will be able to tell if any of the standards set forth in this act are threatened to or will be exceeded from the land applications ultimately authorized pursuant to the SWRCB's GO. It appears there will essentially be no way to tell if these standards are being violated given the extremely limited groundwater monitoring that *may* be required for some sites and the total absence of *any* surface water monitoring.

L1-35

e. Page 5-29.

On page 5-29 it states that the CDFA is developing regulations re heavy metals in biosolids. The EIR should set forth the status of and nature of those regulations.

L1-36

**7. Regrowth of Pathogens in Biosolids Following Treatment to Reduce Pathogens.**

The potential for pathogens to regrow *after* the biosolids have been treated to reduce pathogens to both Class A and B pathogen reduction standards appears to be completely overlooked in the Revised EIR. Sufficient information regarding the growing concerns over pathogen regrowth should be added to the Revised EIR and the potential adverse impacts therefrom should be fully investigated and evaluated. The various alternatives' ability to lessen or avoid any such impacts should also be fully discussed and explained. For more detailed information regarding pathogen regrowth, see the following Exhibits attached hereto: Exhibit "B," at page 8, et seq. & Exhibits "C" and "D."

L1-37

**8. PBDEs (Polybrominated Diphenyl Ethers), PPCPs (Pharmaceuticals and Personal Care Products), etc. in Biosolids.**

The Revised EIR should include reference to the new information and concerns relating to PBDEs and PPCPs set forth in and referenced in Exhibit "E" attached hereto, and explain in detail how the SWRCB's GO will protect all aspects of the environment (air, water, soil) and protect all forms of environmental organisms, from soil biota to humans, from the potential adverse short and long-term impacts from these substances. And in particular the specific facts and analysis upon which the SWRCB's staff and/or the EIR preparers believe there will not be any potentially significant short or long term impacts from any PBDEs or any one of the over six million (6,000,000) commercially available PPCPs which are commonly introduced into our domestic wastewaters, and, hence, end up in biosolids.

L1-38

///

///

Thank you for your time and attention to the above information and concerns.

Very truly yours,

---

Dante John Nomellini, Jr.  
Attorney for the Central Delta Water Agency

DJR/djr  
Enclosures

## Central Delta Water Agency

**Comment L1-1:** The commenter argues that disposal methods other than land application, specifically biosolids use as an alternative daily cover in landfills, have not been given a meaningful analysis in comparison to methods of land application. The commenter recommends, among the alternatives considered, the selection of both the Class A Only and Food Crop Limitation Alternatives combined.

Response: A number of other means of disposal are analyzed in Chapter 14 for environmental impacts in comparison to land application, specifically as part of the Land Application Ban and Food Crop Limitation Alternatives. Some other means are already in widespread use, such as alternative daily cover in landfills. According to the most recent U.S. EPA data, almost 30% of biosolids generated in CA in 2003 were used as alternative daily cover in landfills or disposed in mono-fill sites. Nothing in the U.S. EPA Part 203 and SWRCB GO regulations explicitly prohibits or limits the continued use of biosolids as daily cover in landfills.

See Master Response #4 for a discussion of the combined selection of the two alternatives.

**Comment L1-2:** The commenter suggests a GO for Class A only, with Class B application done through individual WDRs, and that this opportunity was not considered in the revised draft PEIR.

Response: The revised draft PEIR discusses the ability of RWQCB's to issue individual WDR's on page 2-6. The reasons and benefits for including Class B land application under the GO are discussed on pages 2-10 and 2-11.

**Comment L1-3:** The commenter argues in favor of the Class A Only Alternative, based on the perceived potential for short and long-term problems associated with the introduction of pathogens into the environment.

Response: See Master Response #1. Given the lack of any compelling evidence that the implementation of the GO, based on the U.S. EPA 503 regulations, including the Class B regulations, will result in significant environmental impacts, there is no compelling reason to select the Class A Only alternative. Given that the requirements for Class A land application in the Modified GO are less onerous than the requirements for Class B land application, to that extent, the Modified GO would encourage Class A land application.

**Comment L1-4:** The commenter reasons that given human carelessness, acts of mother nature, reckless and intentional disregard, and inadequacy of staff, there is no certainty that the protections for Class B application sites included in the proposed GO will be implemented and complied with.

Response: All of the factors mentioned—human carelessness, acts of mother nature, reckless and intentional disregard, and inadequacy of staff—could also result in impacts from the nonperformance of any environmental laws and regulations, including but not unique to those of a GO for the land application of Class B biosolids. CEQA case law holds that an agency may rely on compliance with law to fully mitigate an impact to insignificance.

**Comment L1-5:** The commenter states that the most compelling reason to select the Class A Only Alternative is that no one has performed potential risk assessments on the introduction into the environment of any of the “tens of thousands of known and unknown pathogens present in biosolids.” The commenter urges not to “throw all common sense and reasonableness out the window.”

Response: See Master Response #1. Existing scientific literature on environmental risk assessments associated with various pathogens that may be present in biosolids is identified in the revised draft PEIR on page 5-18. Assuming that it is true as stated in the comment letter that there are “tens of thousands of known and unknown pathogens present in biosolids,” that statement must be seen in light of the fact that natural healthy soil contains known and unknown pathogens many orders of magnitude greater, for which few if any environmental risk assessments have been done. Fortunately, the soil itself provides a substantial degree of environmental protection:

Introduced organisms usually cannot persist in the highly competitive, diverse, multi-organism associations that exist within the many habitats and niches within the soil. These are responsible for the soil self-cleansing that provides self-protection against the many plant and animal pathogens introduced to this milieu by both natural and anthropogenic means (Sumner 2000).

In fact, the composting process used to convert Class B to Class A Biosolids, duplicates the process that occurs in the soil naturally, only at a somewhat faster rate.

**Comment L1-6:** The commenter states that a risk assessment analysis has not been done on any of the various U.S. EPA regulations pertaining to the land application of Class B biosolids.

Response: See the revised draft PEIR, Appendix E, Part 2, for information on the risk assessments that were conducted by the U.S. EPA as the basis for the establishment of the 503 regulations, and determining the effectiveness of the Class B regulations. See also Master Response #1.

**Comment L1-7:** The commenter suggests that the PEIR revise the comparative analysis of the alternatives to better reflect the pathogen reduction benefits of Class A biosolids. In particular, the commenter would like the PEIR to acknowledge the benefit of “essentially eliminating the pathogens before biosolids are land applied, and, hence, essentially eliminating the potential adverse impacts from those pathogens.”

Response: The PEIR clearly distinguishes the levels of pathogen elimination that differentiate Class A and Class B biosolids. The Executive Summary states that: “Class

A biosolids are treated sufficiently for all pathogens to be essentially eliminated, and Class B biosolids have been treated sufficiently for the level of pathogens to be substantially reduced but not completely removed” (page ES-3). The difference is further highlighted under “Relationship of the GO to Part 503 Regulations” which describes the conditions for use which apply to Class B biosolids, but not to Class A (page ES-8). Further detail is provided in Chapter 2 of the PEIR under the discussion of “Federal Programs—Part 503 Regulations” (page 2-6) and in Chapter 5 (Public Health).

Nonetheless, the discussion of the Class A Only Alternative in Chapter 14 of the PEIR has been revised to further highlight the stricter pathogen reduction requirements that apply to Class A biosolids in comparison to Class B.

**Comment L1-8:** The commenter states that the most compelling reason to select the Food Crop Limitation Alternative is that no one has performed potential risk assessments on the consumption of crops by humans that could contain the “over sixty thousand” known and unknown chemicals in biosolids, and the products of their reactions, other than 24 known chemicals. The commenter states that SWRCB staff cannot “in good faith and with straight faces” claim that no harm to humans could come from consuming food crops to which any of the “sixty-thousand” chemicals may have been applied through biosolids applications.

Response: See the revised draft PEIR, Appendix E, Part 2, for information on the risk assessments that were conducted by the U.S. EPA as the basis for the establishment of the 503 regulations, and determining the effectiveness of the regulations. See also Master Response #1.

**Comment L1-9:** The commenter suggests a GO for the Food Crop Limitation Alternative, with Class B application done through individual WDRs, and that this opportunity was not considered in the revised draft PEIR.

Response: See Response to Comment L1-2.

**Comment L1-10:** The commenter requests that the PEIR include a comparison of the alternatives in tabular format.

Response: To assist readers, a new table has been added to the Executive Summary (Table ES-2), which compares the impacts of the proposed GO and of the alternatives.

**Comment L1-11:** The commenter states that the environmental analysis of the alternatives does not compare the impacts of the alternatives to the baseline, and instead compares the alternatives to the proposed project.

In addition, the commenter states that the PEIR’s conclusions regarding truck traffic, air quality, and energy use of the Class A Only and Food Crop Limitations alternatives is speculative and unsupported by facts and analysis.

Response: State CEQA Guidelines Section 15126.6(d) states that an “EIR shall include sufficient information about each alternative to allow meaningful evaluation, analysis,

and comparison with the proposed project.” The effects of the alternatives may be inferred from their comparative relationship to the project (which has been analyzed from the baseline) and its impacts.

Regarding the two alternatives impacts on traffic, air quality, and energy use in comparison to the proposed project, the analysis of these impacts is found on pages 14-35, 14-36, and 14-40 of the revised draft PEIR. Additional discussion has been added to these sections in the FEIR to clarify the bases for these conclusions. See also Master Response #6 regarding traffic analysis.

**Comment L1-12:** The commenter suggests that the listed mitigation measures included in the Modified GO Alternative should also include Mitigation Measure 5-4 regarding radioactive materials.

Response: The measure was inadvertently left off the list of provisions applicable to the Modified GO Alternative. The PEIR has been revised to clarify that the measure would apply.

**Comment L1-13:** The commenter requests an explanation of the statement under the Class A Alternative that Class A biosolids have a lower nitrogen content than Class B biosolids.

Response: As with many of the statements in this program-level EIR, the statement is intended to be a general one. The nitrogen content of biosolids can vary depending upon the type of processing the material has undergone. Nitrogen is lost through some forms of Class A treatment. The U.S. EPA’s *Biosolids Technology Fact Sheet -- Alkaline Stabilization of Biosolids* (2000) states that alkaline stabilization treatment results in a nitrogen content lower than in several other biosolids products. During processing, nitrogen is converted to ammonia, which is lost to the atmosphere through volatilization. Volatilization increases with the heat of the process. According to *Biosolids Generation, Use, and Disposal in the United States* (U.S. EPA 1999), “biosolids compost has less total nitrogen than most other forms of treated biosolids due to processing, dewatering, dilution of nutrients by bulking material, and loss of ammonia during the composting process...”

This generalization is supported by the differing total nitrogen contents reported by the Los Angeles Bureau of Sanitation (which produces Class A biosolids almost exclusively) and the Orange County Sanitation District (which produces mostly Class B biosolids). In their 2003 Annual Reports (available on-line at [www.lacity.org/SAN/biosolidsems/about.htm](http://www.lacity.org/SAN/biosolidsems/about.htm) and [www.ocsd.com/info/biosolids/default.asp](http://www.ocsd.com/info/biosolids/default.asp), respectively), the Sanitation Bureau reported the mean total Kjeldahl nitrogen content of its biosolids to be 74 mg/kg (Hyperion Treatment Plant) and the Orange County Sanitation District reported a total Kjeldahl nitrogen content of 704–718 mg/kg (Treatment Plant #2 and Reclamation Plant #1).

**Comment L1-14:** The commenter requests that the PEIR identify any other non-pathogenic constituents of Class A biosolids that are similarly reduced in comparison to Class B treatment.

Response: The U.S. EPA's *Biosolids Technology Fact Sheet -- Alkaline Stabilization of Biosolids* (2000) states that alkaline stabilization treatment also results in a lowering of available phosphorous. This would have little impact on the environment.

**Comment L1-15:** The commenter asks whether, given that biosolids are applied at agronomic rates, the reduced nitrogen content of Class A biosolids would result in more Class A biosolids being applied to crops than would occur if Class B biosolids were used.

Response: The amount of biosolids applied is dependent on a variety of factors, including the allowable agronomic rate, characteristics of the soil (alkaline stabilized biosolids would be unlikely to be applied in large amounts to alkaline soils), and the other characteristics of the biosolids (compost would be suitable where slow release of nitrogen is desired). As a broad generalization, because Class A biosolids may provide less nitrogen than Class B biosolids, they might be applied at a higher rate. However, an estimate of how much more might be applied is not a direct function of the available nitrogen content and would be purely speculative.

**Comment L1-16:** The commenter requests that the PEIR identify the relative percentages of Class A and Class B biosolids that were land applied in 2001. The commenter states that if the information is not readily available, then the current tracking and monitoring of biosolid application is "woefully lacking."

Response: That information is not readily available. Class B biosolids are considered the most common type because they are produced by most POTWs, including those of East Bay Municipal Utility District (MUD), Orange County Sanitation District, County Sanitation Districts of Los Angeles County, and San Francisco Public Utilities Commission. Some smaller POTWs, such as the City of Bakersfield, have their own land to which they apply the biosolids. The Los Angeles Bureau of Sanitation, which converted biosolids production at its Hyperion plant to Class A in 2002, is an exception.

Information on the type and volume of biosolids is collected by the U.S. EPA Region IX, in the form of annual reports from the POTWs. Until recently, U.S. EPA has not had this information available in a database or similarly accessible form.

The RWQCBs regulate the land application of biosolids through the NPDES permitting process. They are sent annual reports from the holders of those permits (generally the receiving sites). While this information is on file at the various RWQCBs, it is not in database or other easily referenced form.

This does not imply that tracking and monitoring of the land application of biosolids is not occurring. The tracking and monitoring information is simply not available in a format that allows easy collation.

**Comment L1-17:** The commenter requests that the discussion of the Class A Only Alternative be clarified to include references to individual waste discharge permits for Class B biosolids and alternative daily cover in landfills.

Response: The PEIR has been revised on page 14-5 to clarify that the existing waste discharge permitting process would not be eliminated under the Class A Only Alternative. Alternative daily cover is already mentioned in the passage cited by the commenter and no additional clarification is needed.

**Comment L1-18:** The commenter requests that the discussion of the Food Crop Limitation Alternative be clarified to include references to individual waste discharge permits for Class B biosolids.

Response: The description of the Food Crop Limitation Alternative on page 14-13 has been revised to clarify that the existing waste discharge permitting process would not be eliminated by the GO.

**Comment L1-19:** The commenter requests that the PEIR include an estimate of the amount of wheat grown for human consumption on lands to which biosolids have been applied.

Response: The discussion on page 2-3 of the PEIR has been revised to include a new table (Table 2-2b) that includes the results of the 2003 annual reports submitted to U.S. EPA, Region IX. This new data describes the types of crops that are supported by biosolids applications. In 2003, wheat for all uses accounted for approximately 15% of the agricultural land to which biosolids were applied. Wheat for human consumption was grown on approximately 1% of the agricultural land to which biosolids were applied. The PEIR has also been revised at page 2-2 to clarify that the 2001 data was raw data compiled by the U.S. EPA and that the 2003 data is more accurate. The changes in the data provide a clearer, more recent view, but do not affect any conclusions in the PEIR.

**Comment L1-20:** In reference to the quoted passage from page 14-17 of the revised draft PEIR, the commenter states that the PEIR fails to indicate that the disinclination of a farmer to obtain individual WDRs in order to continue to apply biosolids to land producing food crops after adoption of a GO with the Food Crop Limitation Alternative is due only to the financial and other difficulties involved in obtaining an individual permit.

In reference to the second sentence subsequent to the previous, the commenter regards the fact that biosolids are often supplied to farmers for free as indicative that the “proclaimed ‘wonderfulness’ and ‘beneficialness’ of biosolids” is questionable.

Response: The quoted passage states that the farmer’s disinclination is “because the alternative would restrict their future use of the land for food crops.” This statement does not refer solely to the difficulty of obtaining an individual permit, although it is by no means certain that one could be obtained. The statement refers to the contemporary circumstance of worldwide market competition for agricultural products, and that farmers’ survival necessitates maximum flexibility to make annual changes in crop production dependent on market fluctuations. Any restrictions on that flexibility, such as a limitation on growing food crops resulting from a past application of biosolids, could spell economic doom. In addition, future property values dependent on the ability to convert to growing and marketing higher value crops could be affected as well. Another

factor that has to be considered is the likely change in the public perception of food crops grown with the use of biosolids subsequent to a General Order restriction. The more prudent alternative given these circumstances would be not to apply biosolids at all, regardless of the possibility of an individual permit.

Class B biosolids are usually given away free, Class A and EQ biosolids generally have marketable value. This is based on supply and demand, and the perceived value of the product. Given that there are less regulatory requirements and limitations on the land application of Class A biosolids as compared to Class B, Class A would be expected to have greater value. It is therefore not true that all biosolids products have no marketable value.

**Comment L1-21:** The commenter requests an explanation of why chemical fertilizer products have the potential to result in an increased release in nitrogen to the environment in comparison to biosolids. The commenter suggests that the PEIR compare and contrast the amount of nitrogen typically released to the environment via Class A, Class B, and chemical fertilizers, and explain why they are different. The commenter asks whether the amount released is based on relative concentrations of nitrogen and for clarification of what “release to the environment” means.

Response: In general, according to the U.S. EPA’s *Biosolids Technology Fact Sheet – Land Application of Biosolids* (2000), chemical fertilizers are more water soluble than organic fertilizers, release nitrogen more quickly, and so are more likely to leach into groundwater or run off into surface waters. This opinion is seconded by Penn State University’s Cooperative Extension in their publication entitled *Land Application of Sewage Sludge in Pennsylvania: What is sewage sludge and what can be done with it?* (1999). The discussion on page 14-17 has been revised to clarify this point.

Given the variations in the physical characteristics of biosolids based on their method of treatment, soil types (which may bind organic fertilizers at differing rates), nitrogen contents of chemical fertilizers, and type of crop, a quantitative comparison of biosolids and chemical fertilizers is not feasible.

“Release to the environment” is meant to be release to groundwater and surface water. The discussion on page 14-17 has been revised to clarify this.

**Comment L1-22:** The commenter requests that obtaining a site-specific or individual permit to apply biosolids to food crops be added to the list of “possible outcomes” to the adoption of a GO prohibiting application to food crops.

Response: The commenter is correct in stating that a “possible outcome” to the adoption of a GO prohibiting application of biosolids to food crops is that a farmer could apply for an individual permit to apply biosolids to food crops. However it is by no means certain that such an individual permit could be obtained. Regardless, the commenter has failed to read the full context of the quotation: “although there are a number of possible outcomes resulting from eliminating a current beneficial use of biosolids, the following are considered to be a reasonable set of scenarios for biosolids producers in making up

the difference.” The possibility of applying for an individual permit is not considered a “reasonable scenario” for the reasons stated in Response to Comment L1-20.

**Comment L1-23:** The commenter states that the quoted section of the revised draft PEIR referring to the loss of incentive to treat biosolids to the Class A or EQ standard other than for the home market, if the Food Crop Limitation GO was adopted, is incorrect.

Response: The reasoning the commenter gives to arrive at the conclusion of an incorrect statement appears to be technically correct given the assumptions made, although somewhat convoluted. However, it does not seem reasonable that potential land appliers would engage in the expensive process of treating biosolids to EQ standards for the purpose of limited application to non food-crop producing lands in order to evade the GO prohibitions. For this and other reasons stated in the Response to Comments L1-20 and L1-22 above, the assumptions and scenarios developed in the revised draft PEIR are reasonable, and no correction needs to be made.

**Comment L1-24:** The commenter suggests that the EIR should substantiate its statement that surface disposal is unlikely to become a substantial method of disposal under the Food Crop Limitation Alternative. The commenter requests that the EIR compare transportation costs and offer annual costs for dedicated surface disposal cities listed in the EIR.

Response: This is a general statement, based on estimated start up costs for new facilities. East Bay MUD prepared a cost study of such an endeavor and that cost is cited in the PEIR. The costs to existing cities with dedicated surface disposal sites would not be comparable since they include only operations and maintenance, not permitting and construction.

Transportation costs are estimated to be more expensive because there would probably be only a small number of such facilities in the future, due to permitting and construction costs, there would be tipping fees for use of such facilities, and facilities would tend to be located away from urban centers due to space needs and neighborhood opposition. The establishment of such sites would be comparable to permitting of landfills and would therefore be expected to be a long and involved process. The California Integrated Waste Management Board (CIWMB) reports that surface disposal needs large amounts of vacant land and is not used on a widespread basis because of these land requirements (CIMB 2004).

A detailed transportation study is not feasible because the sites of future facilities are unknown and the time frame for such facilities is likely to be years in the future. Any such study would be purely speculative. See also Master Response #2 regarding the level of detail in alternatives analysis.

**Comment L1-25:** The commenter suggests that the PEIR should revise the discussions of landfilling and alternative daily cover (ADC) under the Food Crop Limitation Alternative to reflect their belief that this is “a far superior alternative” to land application.

The commenter states that an increase in the use of biosolids as ADC would likely be the result of an alternative that discourages the use of Class B biosolids. The commenter believes that the PEIR's statement that biosolids' use as ADC would be "unlikely to increase substantially is unsupported."

The commenter requests that the PEIR provide a specific number of landfills that accept biosolids rather than relying on "anecdotal evidence." Further, the commenter requests that the discussion be clarified to distinguish between the number of landfills permitted to accept biosolids and those that are permitted to use biosolids as an ADC. The commenter asks why landfills are not accepting biosolids for disposal and/or beneficial reuse as ADC.

The commenter requests clarification of the statement that only a portion of the landfills in southern California have "available capacity."

The commenter requests clarification of the transportation costs and tipping fees associated with disposing of biosolids in landfills.

The commenter requests clarification of the definition of "proximity to urban areas" as used on page 14-20 of the PEIR, and why the number of landfills accepting biosolids for disposal is "limited."

The commenter requests that the PEIR explain in detail why only 15 of the 161 landfills in California currently use biosolids for ADC. Also, the commenter wants to know how many landfills are currently permitted to use biosolids as an ADC and, for those that are not permitted, what would need to be done to secure appropriate permits. Further, the commenter requests that the PEIR undertake a comparative analysis of the relative costs of using biosolids as ADC, land application of Class A biosolids, distant land application of Class B biosolids, disposal in dedicated disposal sites, and disposal in landfills. Also, the commenter requests that the EIR describe the percentage of the state's total biosolids production could be used for ADC if all 161 landfills were to do so, if half the landfills were to do so, and if those currently permitted were to accept the maximum amount they could for use as ADC. The commenter contends that if all landfills in the state were to use biosolids for ADC, then all impacts identified for the proposed GO would be avoided. In addition, the commenter asks that the PEIR discuss, in detail, what significant drawbacks may exist for more, if not all, landfills in the state to use biosolids as ADC. The commenter believes that a general order that is limited to Class A biosolids and application to non-food crops would tend to encourage other beneficial use options such as ADC, substantially increasing the use of biosolids as ADC.

Response: No substantive change to the current discussion on page 14-19 of the PEIR is necessary. The CIWMB received background information from its staff on the subject of biosolids at its April 13-14, 2004 board meeting. The CIWMB staff report states that approximately 12% of the biosolids generated in California are used as ADC at some landfills. However, of the 161 active landfills in California, only 3 routinely accept biosolids for that use. The discussion on page 14-19 has been revised to reflect that number. The staff report states that "[r]egionally, there are areas in California where

there are no landfills that accept biosolids as ADC and thus ADC is not a widespread biosolids management option.”

The CIWMB staff further reported that about 6% of biosolids are currently being disposed of at landfills. Although 60 landfills are permitted to accept biosolids, “only a portion of this 60 actually accept biosolids.” As with ADC, there are areas of the state where there are no landfills that accept biosolids for disposal and the report states that it is not a widespread management option. This essentially supports the discussion in the PEIR and no revision is necessary.

A compelling reason for stating that ADC use is unlikely to increase substantially is that the California Integrated Waste Management Act’s solid waste diversion requirements create a substantial disincentive to dispose of biosolids in landfills. Under the Act, local jurisdictions are required to divert at least 50% of their pre-1995 solid waste stream from landfills, or face substantial penalties. In its April 13-14 report, CIWMB staff noted that increased landfilling of biosolids would directly decrease diversion rates, increasing the possibility that jurisdictions would no longer meet the 50% standard. The PEIR has been revised to clarify this point.

To clarify, of the 161 landfills in the state, 3 routinely accept biosolids for use as ADC. Of the 161 landfills, 60 are permitted to accept biosolids for disposal and only a portion do so. The reasons for this are unknown and reside with the landfill operators. The U.S. EPA reports, based on 2003 annual reports compiled by Lauren Fondahl the biosolids coordinator for Region IX, that the following landfills receive the majority of biosolids:

- Altamont, Alameda County
- West Winton, Alameda County (uses Class A biosolids for cover)
- Neal Road, Butte County
- West Contra Costa, Contra Costa County
- Puente Hills, Los Angeles County
- Redwood, Marin County
- Monterey, Monterey County
- Prima Deshecha, Orange County
- Otay Mesa, San Diego County
- Ox Mountain, San Mateo County
- Santa Maria, Santa Barbara County
- Morgan Hill, Santa Clara County

- Newby, Santa Clara County (uses Class A San Jose biosolids for cover)
- Hay Road, Solano County
- Portrero Hills, Solano County
- Simi Valley, Ventura County
- Ostrom Road, Yuba County

“Available capacity” as used on page 14-20 of the PEIR is intended to refer to the available working capacity of the landfills. This refers to contractual or operational limits (including permit limits) that are in place at these landfills, as of October 2003 when the referenced technical memorandum was prepared.

Regarding transportation costs and tipping fees related to disposing of biosolids in landfills, the statement in the PEIR is intended to convey that costs associated with landfills include both the cost of transport (which could be less than delivery to a distant land application site), and tipping fees, the charge imposed by the landfill operator for disposing of the biosolids. Tipping fees vary among landfills. The October 2003 Tetra Tech technical memo referenced in the PEIR found that tipping fees at landfills in southern California that were permitted to receive biosolids ranged from about \$25 for an Arizona landfill to about \$50 for a San Diego County landfill. A detailed, statewide comparison of transportation costs of land application versus landfilling would be speculative because of the multiple variables involved (including origin and destination sites, southern vs. northern California conditions [Bay Area POTWs generally have shorter trips to land application sites], site tipping fees, and available capacity).

“Proximity to urban areas” is intended to mean those landfills that are either within an urban area or on its periphery. Because this is a general discussion, in keeping with the general level of detail available for the project, no specific linear distance is specified or implied. The reason for the limited number of landfills that actually accept biosolids for disposal is unknown and resides with the landfill operators.

The commenter is requesting a level of analysis that is not commensurate with the nature of the project and the discussion of alternatives. See Master Response #2. The board disagrees with the commenter’s conclusion that use of biosolids as ADC would substantially increase. The board’s position is supported by the CIWMB staff report cited above.

**Comment L1-26:** The commenter states that the incidence of local Arizona jurisdictions opposing land applications increases the chances of other beneficial reuse options such as landfill ADC will become more common than trucking biosolids to other states.

The commenter suggests that to the extent that traffic would increase along out-of-state routes, there would be a corresponding decrease in traffic to places that would accept biosolids under the proposed GO or Modified GO Alternative.

The commenter asks where the statement “approximately doubles the miles traveled per haul” comes from and argues that this is incorrect.

The commenter requests clarification of the term “considerable” when used in the context of cumulative impacts.

Response: See the response to comment L1-26. ADC is unlikely to increase because, based on the report of the CIWMB, it is apparently occurring at a maximum level at this time. The possibility of Arizona communities banning the application of Class B biosolids is speculative. While there has been opposition to the application of out-of-state biosolids, there is no way of predicting whether that will result in widespread bans.

The discussion of traffic impacts under the Class A Only Alternative on page 14-35 has been revised to more fully address in-state traffic. While the commenter is correct that some of the out-of-state trips would offset existing in-state trips, experience in the San Joaquin counties that have restricted the use of biosolids is showing that trips to those locales are continuing as POTWs convert to Class A treatment, bring Class B biosolids to facilities in the area for treatment to meet Class A regulations before being land applied, and establish composting operations that convert Class B biosolids brought in from the POTW to Class A compost that is applied in the general vicinity of the composting facility. Composting facilities will generate additional trips above those associated with application to land alone because they need substantial amounts of bulking materials to compost with the biosolids. See also Master Response #6.

Table 2-1 of the PEIR has been revised to present new information compiled by the U.S. EPA Region IX from the generators’ 2003 annual reports. This is considered more accurate than the information previously gathered from 2001 reports and replaces it in the PEIR. No changes in conclusions result from this new information.

The statement regarding miles per haul was an inadvertent error and has been revised. The traffic and air quality analyses were based on an assumption of an average haul of about 320 miles one-way. This is not double the distance to southern San Joaquin Valley land application sites that comprise the baseline for analysis. Additional text has been added to the traffic and air quality analyses under the Class A Only Alternative to clarify the basis for analysis.

Cumulative impact analysis is based on the concept that significant cumulative impacts are the result of numerous projects, each of which may make an individually insignificant contribution to the cumulative effect (State CEQA Guidelines Section 15130). CEQA requires an EIR to disclose whether the impact of a project would be considerable within the context of the cumulative impacts of past, present, and foreseeable future projects. The discussion of air quality impacts for the Class A Only Alternative in Chapter 14 has been revised to present the methodology used to estimate the general emissions that could result from additional truck trips arising from numerous POTWs. The analysis indicates that emissions of oxides of nitrogen (an ozone precursor) would exceed the threshold levels set by the South Coast Air Quality Management District and Mojave Air Pollution Control District. As a result, the PEIR concludes that the project’s contribution would be considerable.

**Comment L1-27:** The commenter requests that the PEIR add a cumulative impact section for the other alternatives.

Response: The PEIR has been revised to add cumulative impact sections for other alternatives. In addition, a table has been added to the Executive Summary that allows a comparison between the direct and cumulative impacts of the project and the alternatives.

**Comment L1-28:** The commenter states that conclusions regarding the Class A Only Alternative are unsupported. The commenter contends that the Class A Only Alternative would not result in more treatment to Class A standards because individual WDRs may still be granted for Class B land application. The extent to which the Class A Only Alternative would discourage individual permits is not discussed.

The commenter states that it is speculative to conclude that the Class A Only Alternative would result in more Class A treatment, as opposed to other alternatives such as ADC, landfill disposal, etc.

The commenter contends that the EIR must independently identify the proposed GO's incremental effect on the current trend toward reduced use of Class B biosolids in California. The commenter argues that there is no evidence that the Class A Only Alternative would have any effect on current levels of land application of Class B biosolids.

The commenter disagrees with the conclusion that Class B biosolids will continue to be shipped out of state as a result of the Class A Only Alternative. County Class B restrictions, not the permitting process of the SWRCB, are influencing these choices. The Class A Only Alternative would encourage Class A production, but would not discourage Class B. The commenter also disagrees with the contention that travel distances to Class B land application sites would be longer than currently.

The commenter also disagrees with the traffic analysis' reliance on past trips to San Joaquin Valley sites. The commenter contends that the PEIR lacks information on how far biosolids must be transported within California.

The commenter suggests that the PEIR must analyze the comparative cost of Class A treatment, ADC, landfiling, and other options. The commenter argues that the PEIR must not assume that out of state hauling is the least expensive alternative.

The commenter contends that the PEIR must provide more detailed traffic analyses to support the conclusion that traffic will become more severe under the Class A Only Alternative. Net traffic would be less severe. The commenter also contends that the air quality analysis is flawed because of the flawed traffic analysis.

Response: The text of the PEIR has been revised to reinforce the fact that individual WDRs for Class B land application could be sought under the Class A Only Alternative. However, Class B WDRs would be less favored due to the additional time and uncertainty related to individual permits.

The local ordinances passed in the southern San Joaquin Valley counties offer some insight into what might occur under the Class A Only Alternative. In the face of a ban on Class B land application (a more restrictive situation than the Class A Only Alternative which would not eliminate the possibility of individual Class B application permits), southern California POTWs have increased their efforts to produce Class A biosolids, as the Los Angeles Bureau of Sanitation has done at its Hyperion Plant and as the County Sanitation Districts of Los Angeles County are attempting to do with the Kings County composting facility discussed in the PEIR. At the same time, there is no evidence that the use of biosolids as ADC or disposal in landfills has increased substantially in southern California.

The Class A Only Alternative would greatly simplify the process for obtaining a permit from the RWQCB to land apply Class A biosolids while providing no such simplification for Class B application projects. The greater facility in obtaining permits may reasonably be expected to encourage greater production of Class A biosolids.

The response to the county restrictions on Class B biosolids application has been to route large quantities of Class B biosolids out of state. Establishment of the Class A Only Alternative, by discouraging the issuance of Class B biosolids application permits would have a similar result. Distances to land-application sites is discussed in the revised traffic section of the Class A Only Alternative in Chapter 14.

Regarding the consideration of past trip levels, for the most part, the analyses contained in the revised PEIR rely on the original environmental baseline established for the 1999 PEIR. This approach is consistent with the provisions of State CEQA Guidelines Section 15125 stating that the environmental setting consists of the physical environmental conditions as they exist at the time the notice of preparation was published and that the environmental setting will normally constitute the baseline for environmental analysis. Further, information compiled by the U.S. EPA Region IX from generators 2003 annual reports indicate that large volumes of biosolids continue to be delivered to Kern and Kings Counties. Table 2-1 of the PEIR, as revised, illustrates the volume of these deliveries.

The experience in southern California is indicative of costs. Out of state hauling has increased while ADC, landfilling, and other options have not increased substantially. This is largely a function of the economics. Regarding the level of detail in the alternatives analysis, see Master Response #2. The traffic analysis for this alternative has been revised to clarify its assumptions. The analysis does not assume that traffic will increase everywhere, and notes that local traffic may not change, but does assume an increase in out-of-state traffic. See Master Response #6 for a discussion of the traffic analysis.

**Comment L1-29:** The commenter disagrees with the conclusions regarding cumulative impacts and argues that supporting evidence is lacking and conclusions are speculative. The commenter suggests that the analysis provide more detail regarding past, present, and future projects and potential actions that could reduce the contribution to cumulative impacts to a less-than-considerable level, such as requiring trucks to travel at off-peak hours or use alternative routes. The analysis lacks discussion as to why measures

identified in the cumulative analysis for the proposed GO are not adequate to address the impact of the Class A Only Alternative.

Response: The level of detail requested by the commenter is not commensurate with the statewide level of detail of this project. The discussion of cumulative impact under this alternative has been revised to clarify that it is based on projections, not a list of project. Reliance on projections is authorized under State CEQA Guidelines Section 15130. There are no measures identified that would reduce the contribution of the alternative because the Board does not have the authority to regulate the hours at which trucks may leave a POTW to deliver biosolids to a distant location. The proposed GO would not substantially increase traffic over baseline levels in that it would simplify the process for obtaining permits for the land application of biosolids, but would not substantially change the level of land application. The discussion of traffic under the proposed GO is largely a discussion of existing baseline traffic, with a level of increase related to population growth related biosolids generation. In contrast, the Class A Only Alternative would potentially result in a change in baseline traffic patterns, related air quality, and energy use.

**Comment L1-30:** The commenter contends that, for the same reasons as the Class A Only Alternative, the Food Crop Limitation Alternative analysis is inadequate. The commenter earlier suggested that the PEIR should examine an alternative combining both the Class A Only and Food Crop Limitation alternatives.

Response: See the above responses for the Class A Only Alternative. See also Master Response #4 regarding the combined alternative.

**Comment L1-31:** The commenter argues that the statement “although there is no evidence that the application of Class A, Class B (with restrictions), or EQ biosolids results in creation of a public health risk...” should be deleted for the stated reasons.

Response: See Master Response #1. The statement concurs with the fundamental conclusion in the NAS report that “[t]here is no documented scientific evidence that the Part 503 rule has failed to protect public health” (*Biosolids Applied to Land*, page 3). This conclusion was based on the NRC committee’s review of available scientific literature. Given that the SWRCB GO has more stringent regulations than the U.S. EPA Part 503 rule, the revised draft PEIR statement has a greater margin of error than the NAS report.

**Comment L1-32:** The commenter disagrees with the conclusion that the demand for land application sites will increase as a result of increased production of biosolids.

Response: Land application is the primary means of handling biosolids. As discussed in the PEIR, use as ADC and placement in landfills or dedicated fills has not been and, on the basis of the information provided the CIWMB in its April 13-14, 2004 board meeting, is not expected to be an expanding approach. Therefore, land application will continue to be the preferred handling method, leading to increased demand as population and wastewater treatment increase.

**Comment L1-33:** The commenter asks for an explanation for changes made to Mitigation Measure 4-3.

Response: See Master Response #8.

**Comment L1-34:** The commenter states that the Lewis study of potential health effects is not negated by the referenced University of Arizona study. The commenter notes that once the normal barriers to infection are compromised by the chemical components of biosolids, infections may occur from many sources.

Response: The purpose of adding the discussions of the Lewis study and the University of Arizona study is to inform the Board and the public of the ongoing controversy. The Lewis study is not negated by the University of Arizona study – the purpose of including a discussion of the University of Arizona study is to show that there is empirical evidence that would indicate that the conclusions of the Lewis study may be arguable. This discussion is intended to provide both sides of this disagreement between experts.

As noted in the NRC’s report *Biosolids Applied to Land*, “[t]here is no documented scientific evidence that the Part 503 rule has failed to protect public health.” See also Master Response #1.

**Comment L1-35:** The commenter expresses concern as to how SWRCB staff, staff of other State agencies, and the general public will know if Safe Drinking Water standards for groundwater are not exceeded as a result of biosolids land application.

Response: Chapter 3 of the revised draft PEIR contains a detailed analysis of the potential degradation of surface water and groundwater as a result of biosolids land application under the GO, and concludes that no mitigation is required. Although in response to potential public concern over crop contamination rather than water quality, Mitigation Measure 4-3 provides for the establishment of a public access program for tracking land application of biosolids. The program will include public access to information on annual loading amounts and monitoring data, including groundwater-monitoring data.

**Comment L1-36:** The commenter asks that the PEIR discuss the heavy metals regulations adopted by the California Department of Food and Agriculture (CDFA).

Response: The discussion of CDFA metals regulations has been revised in response to the comment. In January 2002, new regulations restricting the metals content of chemical fertilizers and requiring labeling of packaged fertilizers went into effect. These regulate inorganic fertilizer products and do not apply to biosolids.

**Comment L1-37:** The commenter states that the potential for pathogens to regrow after Class A or Class B biosolids compost treatment is overlooked in the PEIR. The commenter requests addition of information and analysis on this subject.

Response: The commenter submitted two research articles that address the issue of possible pathogen regrowth in Class A biosolids after treatment. Potential for regrowth is

determined by three factors: moisture content, carbon availability, and microbial diversity. The GO pertains to land application of biosolids only, and does not create new regulations for Class A treatment processes. Nevertheless, one GO regulation could be a contributing factor to regrowth potential.

Moisture content of finished compost is identified as a very important factor in pathogen regrowth potential. Regrowth takes place only when moisture is brought to values above 30 percent (Soares et al. 1995).

Draft GO regulation A(14) states that “The application of biosolids containing a moisture content of less than 50 percent is prohibited.” This regulation has now been modified to refer to Class B biosolids only. See also response to comment L4-2.

**Comment L1-38:** The commenter states that the PEIR should reference new information and concerns regarding PBDE (polybrominated diphenyl ether) and PPCPs (pharmaceuticals and personal care products) and explain how the proposed GO will protect environmental and human health. In particular, facts and analysis should be provided to support the contention that there would be no potentially significant long- or short-term impacts.

Response: See Master Response #1. For PBDE, its presence in biosolids is not indicated in the reference provided, and its environmental impact is unknown.



HOGAN GUINEY DICK <sup>LLP</sup>  
A Limited Liability Partnership

MICHAEL M. HOGAN

Tel: 619-687-0282  
Fax: 619-234-6466  
mhogan@hgdllaw.com

March 15, 2004

Mr. Wayne Verrill  
Management Practices Support Unit  
Division of Water Quality  
State Water Resources Control Board  
P.O. Box 100  
Sacramento, CA 95812

**VIA FACSIMILE AND  
FIRST CLASS MAIL**

**Re: Draft Program Environmental Impact Report for General Order for  
General Waste Discharge Requirements for Biosolids Land  
Application**

Dear Mr. Verrill:

We represent the County of Kern, one of the petitioners in the lawsuits which resulted in a judicial determination that the previous program EIR for the General Order ("GO") for general waste discharge requirements for biosolids land application was inadequate. This letter contains the County's comments concerning the adequacy of the draft PEIR. The County requests you respond in writing to the comments below as required by CEQA Guidelines section 15088.

As a preliminary matter, the County joins in and incorporates in this letter the comments submitted by the Kern Food Growers Against Sewage Sludge on or about March 8, 2004. In addition, the County offers the following comments for your consideration:

**PEIR Page No.**

**Comment**

2-2 (Quantity of Biosolids Generated) Did the preparer of the PEIR make any effort to verify the data obtained from CASA? The PEIR has not disclosed to the public that (1) CASA has a vested interest in ensuring that biosolids generators are not required to treat their sludge to Class A or EQ levels, and (2) CASA has filed three separate lawsuits against Kern County to attack the County's adoption of an ordinance prohibiting the application of Class B biosolids Kern County after January 1, 2003.

2-3 (Disposal and Reuse Methods) The PEIR is based on incomplete information and speculation about the amount of biosolids being land applied and the reasons for

L2-1

an apparent decrease in the land application of biosolids. What counties have adopted restrictions on the land application of biosolids after 1998? To what extent have these restrictions reduced the amount of farm land available for the land application of biosolids? Why have these counties adopted restrictions on the land application of biosolids? The PEIR must discuss the reasons that counties which previously allowed the land application of biosolids now restrict or prohibit the practice. Without a discussion of these issues, the entire PEIR is incomplete and biased in favor of biosolids generators need to continue dumping biosolids on California's farm land, and fails to consider the problems from the point of view of the counties and communities in which biosolids are land applied.

L2-2

In addition, why has this section, which is entitled "Disposal and Reuse Methods," been revised to delete information about the counties in which biosolids were land applied and to add information about the counties which generate biosolids?

2-5 (Future Biosolids Production and Use in California) Why does the PEIR assume that the relative percentage of urban/rural residents will remain the same in the future if there is evidence that the general trend of increasing urbanization of the State's population will continue? This is an admission the PEIR knowingly underestimates the future production of biosolids.

The PEIR fails to address how the additional biosolids that will be generated in the future will be used and disposed of. Under CEQA, an EIR cannot omit necessary information on the ground "it is difficult to predict" what impacts may occur in the future. Since the PEIR acknowledges that "biosolids generation will increase substantially" in the future, the PEIR must analyze reasonable foreseeable disposal scenarios for the future increase in biosolids. The PEIR should identify the amount of land currently being used for the land application of biosolids, the amount of additional land that will be necessary to land apply the increased amount of biosolids in the future, the effect of local ordinances which restrict the land application of biosolids on the availability of future land application sites, and the availability of alternative disposal methods to address the increasing competition for limited land application sites.

L2-3

2-8 The PEIR acknowledges that the EPA not only does not enforce the Part 503 regulations, but also that the EPA's oversight of biosolids is lax, inadequately funded and outdated. How can the PEIR conclude the total failure to enforce the federal regulations on which the GO is based is "outside the PEIR's area of concern"? Please describe the monitoring and enforcement program which the State Board and the Regional Boards will implement to ensure that California's regulatory oversight of the GO is adequately funded and actually enforced and monitored. Please provide specific information about who will enforce and monitor the GO, what that enforcement and monitoring will consist of, how frequently that enforcement and monitoring will occur. Please also identify the amount and source of funding that will be made available to the Regional Boards to perform their duties in monitoring and enforcing the GO. Absent such specific information, there are no facts to support the PEIR's conclusion that the shortcomings in the EPA's regulation of Part 503 activities is not pertinent to the GO. Absent specific facts which support this conclusion, it is reasonable to conclude that California's oversight and enforcement of the GO will be as inadequate and lax as that of the EPA.

L2-4

The PEIR's obligation to provide specific facts establishing that the Regional Boards will have the funding, personnel and direction to monitor and enforce the GO

adequately is especially important in light of other revisions of the PEIR, which appear to be removing the responsibility for enforcing mitigation measures from the Regional Boards and making mitigation measures self-enforcing by the generators (see, e.g., Mitigation Measures 7-1 and 7-2), which is exactly the situation that led to the unfortunate absence of federal oversight which is described on page 2-8.

5-46 (Impact: Potential Exposure of Residents . . . to Unsafe Levels of Radionuclides) The PEIR acknowledges the potential for radioactive materials to contaminate agricultural fields is a concern and a potential significant impact. Although the PEIR says radioactive materials is not a "widespread problem," it does not quantify the problem in any meaningful way understandable by the general public. Where is the document referred to in Mitigation Measure 5-4 as the required mitigation measure? What does it require? It does not appear to be included in the appendices at the rear of the draft PEIR. As a result, the draft PEIR is defective because it does not inform the public or the decision makers of what actions must be taken by biosolids generators to mitigate the potential significant impact of radioactive materials in biosolids, and prevents the public from having an opportunity to evaluate and to comment on the effectiveness of the proposed mitigation measures.

L2-5

6-6 (Thresholds of Significance) Why did the PEIR change the threshold of significance by deleting "conflict with future planned land uses"? In light of the projected substantial increase in biosolids in the future, the potential conflict with future planned land uses will be a significant environmental impact. What facts support the deletion of this criterion?

L2-6

6-7 (Impact: Application of Class B Biosolids at Locations that May Conflict with Existing Land Uses, etc.) Why was the parenthetical regarding the absence of conflicts with Class A biosolids deleted? Why didn't the PEIR consider the GO's allowing only the land application of Class A biosolids as a mitigation measure that could completely avoid this potential impact?

L2-7

7-11 (Mitigation Measure 7-1) Why has this mitigation measure been revised to eliminate the Regional Board's role and responsibilities with respect to this measure? In removing the Regional Board's duties and making this mitigation measure self-executing, the PEIR has created exactly the same situation as exists with respect to the EPA's role in monitoring and enforcing Part 503 regulations. What facts support the assumption that this revised mitigation measure will be effective in light of the PEIR's acknowledgment that the EPA's monitoring and oversight of Part 503 is lax, underfunded and inadequate?

This mitigation measure, as revised, also constitutes an improper deferral of the identification of potential adverse impacts and mitigation measures, as well as an improper delegation of the responsibility for formulating and approving mitigation measures. It is contrary to numerous judicial decisions under CEQA for the State Board to defer its obligation to identify potential significant impacts and to establish mitigation measures. The State Board's delegation of its responsibility for selecting and approving mitigation measures to the dischargers also violates CEQA.

L2-8

7-13 (Mitigation Measure 7-2) The comment above regarding Mitigation Measure 7-1 also applies to Mitigation Measure 7-2.

|       |  |       |
|-------|--|-------|
| 13-5  | (Mitigation Measure 13-2: Reduce Sources of Nitrate Contamination) Why did the revised PEIR delete the information and conclusion regarding a potential significant impact on fish productivity? What facts support this deletion?   | L2-9  |
| 14-8  | (Class A Only Alternative) Although it states the Class A Only Alternative would "limit the most common current approach" to disposing of biosolids, the PEIR fails to inform the public that the generators currently treat their sludge only to Class B levels because it is the cheapest way for them to dispose of their sludge. The PEIR's analysis of the Class A Only Alternative is biased and unbalanced and considers Class A's benefits and burdens only from the point of view of biosolids generators. Did the preparers of the PEIR interview elected and appointed officials and relevant employees of the counties which have adopted restrictions on the land application of Class B biosolids, to find out what information the counties in which biosolids are and were land applied may have concerning the benefits and burdens of Class A biosolids?   | L2-10 |
| 14-9  | The PEIR acknowledges that some generators are treating their sludge to produce Class A biosolids. However, the PEIR does not identify which generators are doing so, the amount or percentage of biosolids which currently is being treated to Class A levels, or the incremental cost required to treat biosolids to Class A levels. The PEIR also fails to identify which of the several approaches to treating sludge to Class A levels is the one used most often and is the most effective in terms of environmental impacts, economic cost, and achievability.  | L2-11 |
| 14-13 | The PEIR fails to disclose to the public that Robert Gillette is a "expert witness" hired by the certain generators in their lawsuits attacking local regulations requiring the use of Class A biosolids only. What type of lawsuit was it in which Mr. Gillette gave the deposition referred to? Who were the parties to the lawsuit? On whose behalf was Mr. Gillette testifying? Did the preparers of the PEIR make any effort to analyze critically the energy consumption data provided by the generators' paid witness? The PEIR's use of this data reflects the bias in favor of the generators' preferred method of sludge disposal--Class B biosolids--which permeates the entire PEIR.   | L2-12 |
| 14-20 | If an increasing number of communities in California and Arizona are adopting restrictions on the land application of Class B biosolids, making the long-term availability of land available for Class B disposal insecure, wouldn't the Class A Only Alternative become a more environmentally preferable alternative? Why doesn't the PEIR contain any information on why an increasing number of jurisdictions are adopting restrictions on the land application of Class B biosolids?  | L2-13 |
| 14-34 | The PEIR's comparison of the benefits and burdens of the Class A Only Alternative is biased and incomplete. It fails to address the basic reason many jurisdictions in California, and an increasing number of jurisdictions in Arizona, have adopted restrictions or bans on the continued land application of Class B biosolids. That is, the pathogens in Class A biosolids are eliminated during the sludge treatment process <i>before</i> they are applied to farm land. The pathogens in Class B biosolids are not eliminated at the treatment plant, but are expected to die off over time <i>after</i> the biosolids are applied to farm land. Because there are measurable levels of pathogens in Class B biosolids at the time they are applied to farm land, federal regulations impose strict site controls and management practices on the land application of Class B biosolids in order to protect the public health and environment until the pathogens are gone. The EPA acknowledges "there are no guarantees" regarding the use of biosolids and can offer assurances of |       |

safety only “[w]here biosolids have been applied in accordance with Federal and State regulations.” However, the PEIR acknowledges that EPA enforcement is virtually non-existent. The EPA neither monitors nor enforces the management practices or site restrictions required to protect the public health and environment from the pathogens remaining in Class B biosolids when they are applied to farm land.

The PEIR is defective because it failed to discuss some of the critical differences between the effects of Class A and Class B biosolids on the environment. Why doesn't the PEIR discuss, for example, the potential environmental impacts as well as the benefits and burdens relating to the differences between Class A and Class B biosolids with respect to who is responsible for removing pathogens (i.e., those who generate the biosolids or those who receive them), when pathogens are eliminated (i.e., before they are land applied or after), and where the pathogens are eliminated (i.e., at the treatment plant or while deposited on farm land). The PEIR also should have provided a comparative discussion of the benefits and burdens of requiring pathogen treatment which allows biosolids to be land applied without risk to the public health and environment (i.e., Class A) with that which requires strict site controls and management practices for up to 38 months after biosolids are applied to farm land in order to protect the public health and environment (i.e., Class B). Overall, the most glaring omission in the PEIR's comparative analysis of the Class A Only Alternative is its failure to provide an answer to the question inherent in the PEIR's recognition of the increasing number of jurisdictions which have adopted restrictions or bans on the land application of Class B biosolids: Why is the number of such jurisdictions increasing? What adverse impacts are these jurisdictions seeking to avoid in their communities?

L2-14

The PEIR's comparative analysis of the Class A Only Alternative also is defective because it fails to consider that the “more severe impacts” it might cause (in comparison with the proposed GO) would result from the generators' presumed intention not to comply with a Class A Only requirement. The potential more severe impacts on traffic, air quality and noise, both direct and cumulative, would be the result of the generators' refusing to produce Class A biosolids and instead continuing to produce Class B biosolids to be shipped out of state. The PEIR is defective because it does not consider the benefits that would occur if it were assumed the generators would comply with a Class A Only Alternative. The PEIR's assumption that generators would refuse to comply with a GO that allowed only the land application of Class A biosolids renders the entire analysis defective.

The County of Kern appreciates the opportunity to comment on the draft PEIR. It is apparent, however, that until the preparers of the PEIR begin to analyze the issues in a more objective manner, their analysis will continue to be one-sided, incomplete and inadequate. CEQA requires such important environmental review to present complete information, not merely that which favors a desired outcome. For the reasons set forth above, we look forward to a thorough re-examination of the premises and biases on which the PEIR is based. Thank you.

Mr. Wayne Verrill

- 6 -

March 15, 2004

Sincerely,

A handwritten signature in black ink, appearing to read "Michael M. Hogan", with a stylized flourish at the end.

Michael M. Hogan

MMH

cc: Bernard C. Barmann, Sr., County Counsel  
James H. Thebeau, Deputy County Counsel

## County of Kern (Represented by Hogan Guiney Dick)

**Comment L2-1:** The commenter asks whether the preparers of the PEIR made an effort to confirm data received from the California Association of Sanitation Agencies (CASA). The commenter is concerned that the PEIR does not disclose that CASA has a vested interest in ensuring that POTWs are not required to treat their biosolids to meet Class A or EQ standards, and that CASA has filed three law suits against Kern County's adoption of an ordinance prohibiting the application of Class B biosolids within its unincorporated areas.

Response: The Board has made the revised draft PEIR available to an extensive list of interested agencies, groups, and individuals for their review and comment. Pursuant to Public Resources Code Section 21082.1, any person may submit information to a lead agency for its consideration. The SWRCB, through its staff, subjected all such submittals to its independent judgment before releasing the draft revised PEIR for public review.

CASA is an organization made up of most of California's POTWs. Its members produce biosolids, including Class A, Class B, and EQ, as a byproduct of wastewater treatment. A number of these POTWs submitted comments supportive of the proposed GO or the Modified GO Alternative. In their comments many of them stated that the proposed GO or the Modified GO Alternative would allow them flexibility in selecting the method of beneficial use or disposal to which they would subject the biosolids that they produce.

Although certainly of interest to CASA and Kern County, the series of lawsuits over the County's adoption of its biosolids ordinance is not pertinent to this PEIR. It has no bearing on the potential environmental impacts of the proposed GO.

**Comment L2-2:** The commenter contends that the PEIR is based on incomplete information and speculation about the amount of biosolids being land applied and the reasons for an apparent decrease in the land application of biosolids. The commenter requests that the PEIR identify the counties that have adopted restrictions on Class B biosolids land application after 1998. Also, the commenter contends that the PEIR must discuss the reasons why the counties have passed restrictive ordinances. The commenter believes that without this information, the PEIR is biased in favor of biosolids generators need to continue applying biosolids on farmland and fails to consider the problems from the point of view of the counties and communities in which biosolids are land applied.

Response: Chapter 2 of the PEIR has been revised to include the results of the 2003 annual reports submitted to the U.S. EPA by biosolids producers. This is a more accurate estimate of production levels and locations of application than the 2001 CASA survey.

See response to comment S2-1 for information on county ordinances. As noted there, the discussion of county ordinances in Appendix C of the PEIR has been updated.

Due to the variables involved, particularly that the amount of land available for application of biosolids is directly dependent upon the willingness of individual

agriculturalists to use biosolids, no accurate estimate can be made of the amount of land which may be affected by the county restrictions enacted since 1998. As shown by the proposed composting operation in Kings County (discussed in comment NGO2-6) and land application occurring on city-owned lands (such as in the City of Bakersfield), the county restrictions do not necessarily eliminate the importation of Class B biosolids or their application to land. Estimating the amount of land now unavailable for Class B biosolids application as a result of county ordinances would be speculative.

The PEIR discusses county ordinances in Chapter 2. The discussion has been expanded to identify selected local restrictions.

The various reasons for the passage of county ordinances which restrict the use of Class B biosolids and a political analysis thereof are not pertinent to an analysis of the potential environmental impacts of the proposed GO. For informational purposes, however, the discussion of county regulations in Chapter 2 has been revised to provide a brief statement regarding the common findings contained in the most recently adopted ordinances.

Passage of county ordinances is a political action, based on the consideration of a variety of factors by each county board of supervisors. A board of supervisors has different responsibilities and a narrower physical jurisdiction than the SWRCB. The decision of the local governing body to restrict the use of Class B biosolids at the local level is not based on the same considerations that may be before the SWRCB.

As with most, if not all, land use ordinances these ordinances are intended to be protective of the public health and safety, as it is viewed by the particular board of supervisors. Practically all of the county ordinances passed since 1998 express concern over the potential health effects of the use of Class B biosolids. They are the result of public hearings at which the board of supervisors considered testimony on both sides of the question of whether Class B biosolids application raises risk.

The PEIR discloses this information about the potential adverse effects of biosolids application to the SWRCB for their independent evaluation and decision. It analyzes the potential impacts in the context of available information, U.S. EPA regulations, and the proposed regulations contained in the proposed GO. The PEIR also discloses that number of counties have chosen to restrict the land application of biosolids within their jurisdiction. This meets the requirements of CEQA for a good faith, full disclosure.

**Comment L2-3:** The commenter asks why the PEIR is based on an assumption that the relative percentage of urban/rural residents will remain the same over time. In addition the commenter believes that the PEIR does not adequately address how the additional biosolids produced in the future will be managed. The PEIR should identify the amount of land currently being used for land application and project the additional land that will be necessary in the future. It should also discuss the availability of future land sites in light of local ordinances restricting biosolids application and the availability of alternative disposal methods to address the increasing competition for limited land application sites.

See Master Response #1 also.

Response: See the Response to Comment L2-2 for a discussion of population. The uncertainty over available land discussed in that response also applies here. There is no reasonable way to identify the extent to which biosolids may be applied to land in the future given that it is dependent upon the future decisions of an unknown number of individual property owners.

Regarding the availability of other disposal methods such as landfill ADC and disposal in landfills, see the Response to Comment L1-25.

**Comment L2-4:** The commenter inquires as to why “total failure” by the U.S. EPA to enforce biosolids regulations is “outside the PEIR’s area of concern.” The commenter requests information on the RWQCBs monitoring and enforcement program for the GO, and the amount and source of funding for the program.

Response: The reason that the U.S. EPA enforcement of biosolids regulations is “outside the PEIR’s area of concern” is that the SWRCB has no jurisdiction or authority over the U.S. EPA. Information on the RWQCBs monitoring and enforcement program is found in the GO, Appendix A of the revised draft PEIR. Funding for biosolids regulation is provided on an annual basis along with funding for other RWQCB programs in an amount to be determined by the Governor and State Legislature in the State Budget process.

**Comment L2-5:** The commenter requests that the PEIR quantify the current extent of radioactive materials appearing in biosolids. The commenter contends that the PEIR is defective because it does not inform the public or decision makers of what actions must be taken to mitigate the potential impacts from radioactive materials and prevents the public from having an opportunity to evaluate and comment on the effectiveness of the proposed measures.

Response: Comprehensive information about the current extent of radioactive materials in biosolids is not available. The conclusion in the PEIR is based on *Assessment of Radioactivity in Sewage Sludge: Radiological Survey Results and Analysis*, a study undertaken by the federal Interagency Steering Committee on Radiation Standards (ISCORS) that checked the radioactivity levels in wastewater at a number of POTWs selected for their probability of having elevated radioactivity levels. ISCORS’ document *Assessment of Radioactivity in Sewage Sludge: Recommendations on Management of Radioactive Materials in Sewage Sludge and Ash at Publicly Owned Treatment Works* concluded on the basis of the survey that while there were elevated levels of radioactive materials in some samples, estimated doses to potentially exposed individuals were below levels requiring radiation protection actions, and there was no evidence to indicate the presence of a widespread problem. As discussed in Chapter 14 of the PEIR, the document concluded that doses above protective standards could occur under certain scenarios and suggested measures to reduce that possibility. The referenced mitigation measure has been revised to clarify the name of the document being referenced and its recommended provisions.

The ISCORS document cited above is a detailed and technical document. The level of threat identified in its accompanying ISCORS study (*Assessment of Radioactivity in Sewage Sludge: Radiological Survey Results and Analysis*, also cited in the draft revised PEIR) did not appear so large as to necessitate a detailed discussion or including it as an appendix to the PEIR. While not attached to the draft document, the ISCORS documents are fully referenced in the PEIR and are readily available over the internet through a simple web search.

**Comment L2-6:** The commenter asks why the PEIR changed the threshold of significance by deleting “conflict with future planned land uses” on page 6-6 of the PEIR.

Response: There is a typographical error in the text. The thresholds described here are the same as those in the draft statewide PEIR that was circulated in June 1999 (the 1999 PEIR). The stricken language did not appear in either the 1999 draft or final PEIR. The language has not been revised from that certified in the prior final PEIR.

**Comment L2-7:** The commenter asks why the PEIR deleted the parenthetical regarding the absence of conflicts with Class A biosolids on page 6–7 of the PEIR. The commenter also asks why didn’t the PEIR consider restricting land application to Class A biosolids as a mitigation measure.

Response: The parenthetical was removed because it did not relate to the impact described (Application of Class B Biosolids at Locations that may Conflict with Existing Land Uses...). The differences in Class B and Class A biosolids relative to pathogen reduction are described elsewhere in the PEIR, including the discussion on page 14-7 added to the revised PEIR.

Mitigation measures are intended to reduce, avoid, or otherwise soften the impact of the project. It would not make sense to impose a mitigation measure that eliminates one of the classes of biosolids that is included in the proposed GO because that would substantially change the project (the proposed GO) itself. Therefore, Class A Only was considered as an alternative to the project so that it could be examined in more detail.

**Comment L2-8:** The commenter asks why Mitigation Measure 7-1 has been revised to eliminate the RWQCB’s role and responsibility with respect to the measure. The commenter argues that removing the RWQCB from a direct role creates a situation where monitoring and enforcement will be lax, underfunded, and inadequate.

Response: There is a typographical error in the text. Measure 7-1 reflects the measure as stated in the draft statewide PEIR that was circulated in June 1999 (the 1999 PEIR), with the revisions reflected in the final PEIR that was certified by the SWRCB. The underlined language is that contained in the final PEIR. The stricken language did not appear in either the 1999 draft or final PEIR. The measure has not been revised from that certified in the prior final PEIR.

Mitigation Measure 7-1 will require the implementation of site-specific mitigation measures, approved by the California Department of Fish and Game and U.S. Fish and

Wildlife Service. There is no basis to presuppose that enforcement of the measures will be inadequate.

**Comment L2-9:** The commenter asks why the revised PEIR deleted information and conclusions regarding a potential significant cumulative effect on fish productivity in Mitigation Measure 13-2 and what facts supported that deletion.

Response: There is a typographical error in the text. Measure 13-2 reflects the measure as stated in the draft statewide PEIR that was circulated in June 1999 (the 1999 PEIR). The stricken language did not appear in either the 1999 draft or final PEIR. In other words, the measure has not been revised from that certified in the prior final PEIR.

**Comment L2-10:** The commenter notes that while the revised PEIR states that Class B land application is the most commonly used approach to biosolids management, it fails to inform the public that generators produce Class B because it is the cheapest method of management. The commenter believes that this reveals a bias in the analysis and asks whether the preparers of the PEIR interviewed officials of the counties that have adopted restrictions on the application of biosolids to find out information.

Response: Class B treatment is indeed less expensive than treating biosolids to meet Class A or EQ standards. The discussion of possible treatment technologies, beginning on page 14-9, identifies numerous improvements that would be necessary in order for generators to produce Class A biosolids. A reasonable conclusion from this discussion is that substantial additional investments would be needed in order to increase the standard of treatment from Class B to Class A. As discussed in Chapter 2, the pertinent Part 503 federal regulations establish the methods by which biosolids must be treated in order to be land applied. These regulations authorize treatment to Class B standard as the minimum level of treatment that will allow the material to be applied to land.

The cost of Class B treatment is irrelevant to the discussion of potential environmental effects. However, the SWRCB has added a brief discussion of cost to the description of Part 503 regulations on page 2-8 of the revised PEIR.

Regarding interviews with local officials, CEQA does not require a lead agency to consult with stakeholders when preparing an EIR or, as in this case, revising an EIR. The Board has made the revised draft PEIR available to the public and an extensive list of interested agencies, groups, and individuals for their review and comment. Pursuant to Public Resources Code Section 21082.1, any person may submit information to a lead agency for its consideration. The Board, through its staff, subjected all such submittals to its independent judgment before releasing the draft revised PEIR for public review.

**Comment L2-11:** The commenter states that the PEIR does not identify the generators that are treating their wastes to Class A standard, the amount of Class A biosolids being produced within the state, or the incremental costs required to treat biosolids to meet Class A standards. Also, the PEIR does not identify which approach is the most effective in terms of environmental impacts, economic costs, and achievability.

Response: Comprehensive information on the relative amounts of Class A and Class B biosolids being produced is not available. Several generators have provided information about their level of treatment in their comments on the draft revised PEIR, and some have also provided information about the estimated cost of treating all or a portion of their sludge to Class A standard biosolids.

**Table 2-2. Information from Generators about Treatment Levels**

| <b>Agency</b>                                 | <b>Annual Biosolids Production (2003)</b> | <b>Type of Biosolids</b>                     | <b>Method(s) of Reuse or Disposal</b>  | <b>Estimated Cost to Convert to Class A Process</b>   |
|---|---|--|--|---|
| County Sanitation Dists of Los Angeles County | 155,000 dry tons                          | Class B                                      | 20% land applied;<br>53% composted;<br>21% Class A treatment facilities<br>4% cement kiln injection of Class B<br>2% to landfill | \$62 million to build (indoor composting) and \$975,000 O&M annually<br><br>This facility will handle up to 37,500 dry tons/year. |
| East Bay Municipal Utilities District         | 60,000 wet tons                           | Class B                                      | 100% land application or used as ADC   | Up to \$60 million to build and \$4 million O&M annually  |
| Las Virgenes Municipal Water District         | 3,651 dry tons                            | Class B (vast majority composted to Class A) | Dedicated land application farm  |   |
| Los Angeles Bureau of Sanitation (City)       | 263,000 tons                              | 93% Class A                                  | 99% land applied   |   |
| North of River Sanitation District No. 1      | 300 dry tons                              | Class B                                      | 100% land applied  | Increase of 10-15% of operating budget  |
| Orange County Sanitation District             | 47,500 dry tons                           | Class B                                      | 40% land applied<br>40% chemically stabilized<br>20% composted   | Increase of \$5,925,000 in annual budget to build and operate   |
| San Francisco Public Utilities Commission     | 20,833 dry tons                           | Class B                                      | 9% land applied (20% land applied in 2004)   | Up to \$60 million to build, with up to \$1 million O&M annually  |
| Sewerage                                      | 5 wet tons                                | Class B                                      | 50% land   |   |

| Agency  | Annual<br>Biosolids<br>Production<br>(2003) | Type of<br>Biosolids | Method(s) of<br>Reuse or<br>Disposal                            | Estimated<br>Cost to<br>Convert to<br>Class A<br>Process |
|---|---|----------------------|---|--|
| Agency of<br>Southern Marin                       |   |                      | applied<br>50% used as<br>ADC                                   |  |
| South Orange<br>County<br>Wastewater<br>Authority | 6,000 dry tons                              | Class B              | 40% land<br>applied<br>50% composted<br>10% sent to<br>landfill |  |
| City of San Jose                                  | 60,000 to 80,000<br>dry tons                | Class A              | Primarily as<br>ADC   |  |
| Camarillo<br>Sanitary District                    | 800 dry tons                                | Class B              | 100% land<br>applied  |  |
| City of<br>Riverside                              | 7,566 dry tons                              | Class B              | 100% land<br>applied  |  |
| Central Marin<br>Sanitation<br>Agency             | 1,800 dry tons                              | Class B              | 40-45% land<br>applied (during<br>Spring/Summer<br>months)      |  |
| Rancho<br>California Water<br>Districts           | 800 dry tons                                | Class B              | 100% land<br>applied  |  |

There is no single “best” process for Class A biosolids treatment. Each of the treatment approaches discussed in the Class A Only Alternative section of Chapter 14 can be achieved through a number of commercially available processes. All processes are designed to meet the Part 503 rule for treatment. The varying generic environmental impacts of the various treatment approaches are discussed in Chapter 14.

When choosing a specific type of treatment and the specific process used under that type of treatment will be achieved, generators will weigh a number of factors including, but not limited to: installation and operations/maintenance costs (including permitting and energy costs) v. available funding (including the generator’s present and projected rates), political costs of increasing rates and/or proposing a bond issue for construction costs, space needs of the treatment process, perceived reliability of the process, location of available land, site access, and odor control. Each generator makes this decision independently, based upon their particular circumstances. As a result, there is no “most effective” process or method.

The discussion of the Class A Only Alternative in Chapter 14 of the PEIR has been revised to add further discussions of the level of treatment being employed by a number of generators.

**Comment L2-12:** The commenter notes that the PEIR does not disclose to the public that Robert Gillette is an expert witness hired by certain generators in their lawsuits challenging the adoption of local biosolids regulations. The commenter requests more specific information about the nature of the lawsuit from which this information was derived. The commenter believes that the inclusion of this information “reflects [a] bias in favor of the generators’ preferred method of sludge disposal – Class B biosolids – which permeates the entire PEIR.”

Response: Regarding the use of information from the declaration provided by Robert Gillette, Mr. Gillette is a registered engineer employed by Carollo Engineering who has extensive experience in the field of biosolids. He was a contributor to the 1999 PEIR and was retained during the preparation of the revised PEIR for his technical expertise. The referenced declaration was given, under penalty of perjury, in one of the lawsuits between the California Association of Sanitation Agencies and Kern County over the county’s biosolids ordinance. The context of the information was the Kern County ordinance’s negative declaration, which had determined that the prohibition on applying Class B biosolids would not substantially increase fossil fuel consumption. Kern County prevailed in the lawsuit and its adoption of the negative declaration was upheld.

In preparing this declaration, Mr. Gillette reviewed data collected from studies, master plans, and vendors of treatment systems that convert Class B biosolids to Class A standard to develop an estimate of the energy consumption that would be necessary for that conversion. This was pertinent to the analysis of the Class A Only Alternative because it offers a general view of potential energy consumption that may result from this alternative. Energy consumption is a recognized environmental concern.

The SWRCB naturally supports the project that it has proposed. As stated in *City of Vernon v. Board of Harbor Commissioners* (1998) 63 Cal.App.4th 677: “[i]f having high esteem for a project before preparing an EIR nullifies the process, few public projects would withstand judicial scrutiny, since it is inevitable that the public agency proposing the project will be favorably disposed to it.” Supporting the proposed GO is not the same as preparing a biased PEIR. The SWRCB has made a good faith effort to disclose the potential adverse effects of the proposed GO (i.e., the land application of biosolids), provide non-technical discussions of the characteristics of biosolids, and present divergent views on health, safety, and other environmental concerns relating to land application.

The propriety of the SWRCB’s 2000 PEIR was upheld in *County of Kern, et al. v. State Water Resources Control Board* (2003), the litigation that prompted the Board to issue this revised PEIR in order to add discussions of the Class A Only and Food Crop Limitation Alternatives. So that the revised PEIR may better inform the public and decision makers, the SWRCB has chosen to go a step further than simply adding discussions of the two alternatives required by the court -- it has also included new information that has become available since certification of the 2000 PEIR.

The proposed GO would allow the land application of Class B, Class A, and EQ biosolids in accordance with the federal Part 503 regulations and a number of additional

restrictions to be established by the proposed GO itself. The draft text of the proposed GO is included in its entirety in Appendix A of the revised PEIR.

**Comment L2-13:** The commenter asks whether the long-term insecurity of Class B biosolids land application (resulting from an increasing number of local restrictions in California and Arizona) wouldn't make the Class A Only Alternative "a more environmentally preferable alternative?" The commenter also asks why the PEIR doesn't contain any information on why jurisdictions are adopting restrictions on land application.

Response: The environmentally superior alternative was selected on the basis of relative significant impacts. The extent of local restrictions on the land application of Class B biosolids, while perhaps an indicator of local concern and policy, is not an indicator of the larger impacts that may occur from implementation of the proposed GO or any of the alternatives statewide. The PEIR is making a good faith effort to examine and disclose statewide impacts. See also Master Response #3 regarding the selection of the environmentally superior alternative.

Regarding the reasons for local ordinances, see the Response to Comment L2-2.

**Comment L2-14:** The commenter contends that the PEIR's comparison of benefits and burdens of the Class A Only Alternative is "biased and incomplete" because it fails to address what the commenter believes is the basic reason that local restrictions have been adopted – namely, the existence of measurable levels of pathogens in Class B biosolids at the time of their application to land. The commenter would like to see discussions of the potential impacts and benefits of the differences in Class A and Class B biosolids with respect to who is responsible for removing pathogens, when pathogens are eliminated, and where pathogens are eliminated. The PEIR should also provide an answer to the question of why an increasing number of jurisdictions have adopted restrictions on the land application of Class B biosolids and what adverse impacts these jurisdictions are seeking to avoid.

The commenter contends that the PEIR fails to consider the more severe impacts that the Class A Alternative may cause (in comparison to the proposed GO) as a result of the generators "refusing to produce Class A biosolids and instead continuing to produce Class B biosolids to be shipped out of state." The PEIR should consider the benefits that would occur if it were assumed that the generators would comply with a Class A Only Alternative. The commenter contends that the "PEIR's assumption that generators would refuse to comply with a GO that allowed only the land application of Class A biosolids renders the entire analysis defective."

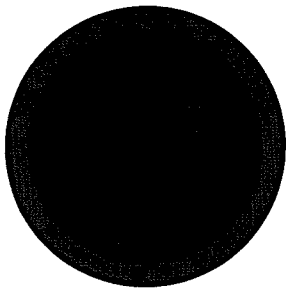
Response: The PEIR addresses the relative differences between Class A and Class B treatment regimes in the following sections: Executive Summary, beginning on page ES-2; Chapter 2, beginning on page 2-6; Chapter 5, discussing public health; Chapter 14, beginning on page 14-5; and Appendix C, Existing Regulatory Programs for Biosolids Land Application. The responsibility for removing pathogens lies with the generator or, in those cases where Class A treatment is occurring outside the POTW, by the operator of the treatment facility.

As described in Chapter 14, the treatments for removal of pathogens needed to meet the Class A standard are more rigorous than those for Class B biosolids. Because Class A biosolids have a very low level of viable pathogens after treatment, they can be applied to land with fewer restrictions than Class B biosolids. The Part 503 rule includes site limitations for lands to which Class B biosolids have been applied. The limitations, particularly the waiting periods prior to harvest, are intended to allow natural processes to eliminate the pathogens that survive the Class B level of treatment and to thereby achieve the same level of pathogen reduction as is otherwise reached by Class A treatment.

Regarding the reasons for the enactment of local ordinances, see the Response to Comment L2-2.

The Class A Only Alternative would not require generators to convert their biosolids production to Class A standard. It would simply streamline RWQCB permitting for the land application of Class A biosolids. Therefore by choosing to continue treating their biosolids to Class B standard, generators would not be refusing to comply with any regulation.

The land application of Class B biosolids would continue to be allowed where individual permits are granted by the RWQCBs (although these individual permits would be more difficult to obtain than a permit under the proposed GO). Generators could continue to treat their wastes to Class B standard under this alternative if they so chose. The question is whether Class A treatment is practical for that generator (a decision made independently by each generator based on its own circumstances), not whether they are “refusing” to produce Class A biosolids. As a result, assuming that all generators now producing Class B biosolids would change to Class A production is unrealistic and would not provide a reasonable analysis of the impacts of this alternative.



L3

## CITY OF RIO VISTA

One Main Street, Rio Vista, California 94571

March 15, 2004

City Council

Mayor Coglianese  
Vice Mayor Woodruff  
Council Member Bhakta  
Council Member Jones  
Council Member Kelly

Mr. Wayne Verrill  
Management Practice Support Unit  
Division of Water Quality  
State Water Resources Control Board  
P.O. Box 100  
Sacramento, CA 95812

City Website Address  
<http://ci.rio.vista.ca.us>

RE: Revised Draft PEIR on Biosolids Land Application

City Manager

One Main Street  
Rio Vista, CA 94571  
707/374-6451  
707/374-5063 Fax

Dear Mr. Verrill:

The 6000 residents of the City of Rio Vista have been heavily impacted by the land application of Class B biosolids on thousands of acres of Solano County grazing land located upwind of the City. Rio Vista is a prized wind energy generation area with sustained periods of high winds. Of particular concern, therefore, is the potential for adverse health impacts from pathogen-laden bioaerosols on our sensitive population of children, elderly and immune-compromised. There have been reported illnesses locally that are believed to have been associated with land application of biosolids. Other local concerns include impacts to ground and surface waters from pathogens, pollutants, metals and endocrine disrupters.

Community Development

One Main Street  
Rio Vista, CA 94571  
707/374-2205

The National Research Council July 2002 report on land application acknowledged "the persistent uncertainty about the potential for adverse human health effects from biosolids" and called for additional scientific research to resolve the question. The City has concluded that in the absence of research that establishes the safety of land application, greater precaution is required. Limiting land application to Class A biosolids is one precaution that can be taken to greatly reduce or eliminate the risk to public health.

Finance

One Main Street  
Rio Vista, CA 94571  
707/374-2176

Surprisingly then, the Draft PEIR concludes that the proposed Modified General Order, not the Class A Only, alternative is the environmentally superior (ES-14). It does this by dismissing the potential risk to public health as mere speculation (ES-18). The analysis of Air Transport as a pathway of pathogen transmission is superficial and inadequate (5-20 to 5-21) and fails to cite more recent studies which suggest the viability and transmissivity of airborne pathogens for distances greater than any current regulatory setback requirement. (See, for example, *Bioaerosol Transport*

Fire

350 Main Street  
Rio Vista, CA 94571  
707/374-2233-Business  
707/421-7090-Dispatch  
707/374-6324 Fax

Police

50 Poppy House Road  
Rio Vista, CA 94571  
707/374-6366-Business  
707/374-2300-Dispatch  
707/374-6217 Fax

Public Works

789 St. Francis Way  
Rio Vista, CA 94571  
707/374-6747  
707/374-6047 Fax

L3-1

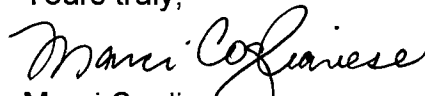
*Modeling and Risk Assessment in Relation to Biosolid Placement*, Dowd, et al, J.Environ. Qual.29:343-348 (2000); and *Bioaerosols from Municipal and Animal Wastes*, Pillai and Ricke, Can. J. Microbiol. 48: 681-696 (2002).)

In weighing the relative environmental superiority of the alternatives, the PEIR inexplicably concludes that the only potential public health impact avoided by the Class A Only alternative is that of exposure to pathogens in Class B sludge-laden fields from direct public access, access which is contravened by existing regulation. (14-35). It is silent on the significant potential public health benefit pathogen-free biosolids would be to sensitive downwind receptors, such as the residents of my community.

Because it finds no public health risk to mitigate, the PEIR concludes that any benefits of the pathogen-free Class A Only alternative are outweighed by greater adverse impacts to truck traffic, air quality, energy use and the cost of wastewater treatment. So in comparison with the Modified GO, the Class A alternative is found environmentally inferior. This conclusion denigrates the value of the health of rural residents when compared with the economic impact on urban residents. This violates the spirit of environmental justice by shifting the adverse impacts of urban area wastewater treatment byproducts to rural residents who derive neither an economic nor an environmental benefit from their creation or use.

In conclusion, the City believes that the Draft PEIR inadequately analyzes the public health impacts of the Modified GO, particularly the risk that pathogen-laden bioaerosols present to our children, elderly and immune-compromised residents. We do not believe that the PEIR analysis supports the conclusion that the Modified GO is the superior alternative. Instead, we conclude that the Class A Only alternative is superior. We hope that the Board will require that further analysis be performed to assure the health and safety of our residents.

Yours truly,

  
Marci Coglianese  
Mayor

L3-1

## City of Rio Vista

**Comment L3-1:** The commenter contends that the comparative analysis of the alternatives should give more weight to the public health benefits of Class A biosolids. In particular, Class A biosolids are nearly pathogen free when applied to land, while Class B biosolids retain viable pathogens. The commenter argues that application of Class B biosolids can result in potential health risks as a result of the air transport of pathogens, particularly in areas such as Rio Vista where there are sustained periods of high winds. The commenter states that “in the absence of research that establishes the safety of land application, greater precaution is required.”

The commenter disagrees with the conclusion that the Modified GO Alternative is environmentally superior to the Class A Only alternative. The commenter also believes that this conclusion “violates the spirit of environmental justice by shifting the adverse impacts of urban area wastewater treatment byproducts to rural residents who derive neither an economic nor an environmental benefit from their creation or use.”

Response: See Master Response #1 regarding health risk.

The general potential for windblown drift is discussed on page 10-8 of the revised PEIR. In addition to the elements of the proposed GO identified there, Mitigation Measure 6-1 would require the injection of biosolids in areas defined as having a high potential for exposure to Class B biosolids. Injection would introduce the biosolids beneath the surface of the soil and so minimize the potential for biosolids being carried away by the wind. In addition, the proposed GO would not apply to operations where Class B biosolids have a moisture content of less than 50%. This would minimize the potential for wind spreading of the biosolids under the proposed GO by prohibiting the application of dry Class B biosolids.

It is important to keep in mind that the proposed GO would only be used in those situations where the RWQCB could be satisfied that all the provisions contained in the GO were to be met. In those situations where the proposed GO did not apply, land application could only be allowed upon approval of an individual permit by the RWQCB. The RWQCB could impose more stringent standards in such situations, if necessary.

The SWRCB is showing greater precaution than would be required solely by federal Part 503 rules. This is manifested in the various prohibitions and requirements described above which exceed Part 503 requirements.

“Environmental justice” is a term that describes the assurance that low-income and minority communities are not subject to a disproportionate environmental impact from a project. Environmental justice is addressed under state law by providing affected communities with meaningful access to information about proposed projects, and to hearings, the decision-making process, and the regulatory process. CEQA does not require consideration of environmental justice concerns in an EIR. Pursuant to State CEQA Guidelines Section 15064, social effects of a project are not treated as significant

effects on the environment unless there is a physical effect as a result of the social effect. Nonetheless, this PEIR discusses the potential public health risks associated with transporting Class B biosolids to rural areas and applying that material to the land. These potential effects have been judged to be less than significant, given the controls the SWRCB has placed in the GO and in mitigation contained in the PEIR.



L4  
COUNTY OF RIVERSIDE • COMMUNITY HEALTH AGENCY  
**DEPARTMENT OF ENVIRONMENTAL HEALTH**

February 20, 2004

Mr. Wayne Verrill  
Management Practices Support Unit  
Division of Water Quality  
State Water Resources Control Board  
P.O. Box 100  
Sacramento, CA 95812

**RE: Comment on The revised Draft Statewide Program EIR Covering General  
Waste Discharge Requirements for Biosolids Land Application**

Dear Mr. Verrill:

I am with the Riverside County Department of Environmental Health, and would like to comment on the Program Environmental Impact Report and General Order for Biosolids Land Application. The revised Chapter 14 has an inaccuracy related to our County, and one of the prohibitions conflicts with local standards under development.

With regard to the revised Chapter 14 Alternatives Analysis, page 14-9, it is premature at best to say that "...Riverside County would not allow the application of odiferous Class A Biosolids". We have drafted an Ordinance, to be introduced in the coming weeks, which would establish a range of buffers, up to 1/2 mile, based in part upon the odiferous nature of the specific material. However, at this time, there is no mechanism disallow any Class A application.

In view of the direction noted above, I must comment on the prohibition of "...the application of biosolids with a moisture content of less than 50%" (General Order, Section A. Prohibition #12) to "...prevent the release of PM10 and its constituents classified as hazardous air contaminants" (Chapter 10. Air Quality, [10-7]). This prohibition is not found in the Draft EIR Dated June 28, 1999, nor is it highlighted as "new" as are the other modifications to the PEIR, so I must presume it was added as part of the original review. However, I am unable to find the basis for this prohibition within the PEIR. Chapter. 10 Air quality starts with a description of Pollutants of Concern:

"Of the pollutants for which ambient air quality standards have been developed, those emitted in the greatest quantities by biosolids transport and application include carbon monoxide (CO), inhalable particulates (PM10 and PM2.5), and the ozone precursors (oxides of nitrogen [NOx] and reactive organic gases [ROG]).

L4-1

These pollutants are emitted primarily as exhaust from trucks used to transport biosolids from wastewater treatment plants to land application sites and by biosolids spreaders.

Fugitive dust is also generated from trucks traveling on paved and unpaved roads and by biosolids spreaders operating at farm sites.”

I am unable to locate any language within this section that would implicate the sludge itself, or its moisture content, as a factor in the creation of “...PM10 and its constituents classified as hazardous air contaminants”. Nor am I able to find language to support a moisture requirement.

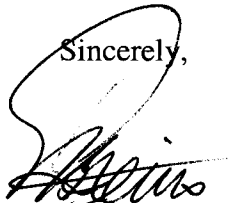
Why is this an issue for us here in Riverside County? Our intent in drafting a local Class A Ordinance for Riverside was to supplement State and Federal rules and address “quality of life issues” that those rules omitted. While we have very limited exposure to Class A material being land applied, to date the least objectionable sewage sludge we have encountered, in terms of odors, is the Class A heat/air dried material. The material we have seen is very granular and does not appear to be a potential source for dust. As identified in Chapter 14 of the PEIR, however, this material generally has a moisture content of 10% or lower, and would therefore be prohibited for application. This is in spite of the commentary, again in Chapter 14, pg.14-11, that “One positive impact is that the weight and volume of the biosolids hauled from the treatment plant would be reduced to a quarter of the ‘dewatered’ biosolids amount. This significantly reduces the number of truck loads hauled from the site and subsequent vehicle emissions and traffic disruption” i.e. the stated primary source for these pollutants. Based on the language and arguments of the PEIR the use of this material would be more effective in mitigating “PM10 and its constituents” then requiring a minimum moisture content.

L4-2

This prohibition would also apply, again per the data provided in Chapter 14, to “In-vessel composted” and possible other varieties of Class A sewage Sludge, including other forms of compost or sludge based products. These are the very varieties we are seeking to encourage via our proposed Ordinance. **We would like to see language that creates some flexibility within the moisture requirement, or the analysis that lead to this seemingly contradictory standard.**

If you have any questions regarding this letter, please call me at (909) 955-8982.

Sincerely,



Damian Meins, Deputy Director

## County of Riverside, Department of Environmental Health

**Comment L4-1:** The commenter informs that the revised draft PEIR has inaccurately stated the County of Riverside position on the application of odiferous Class A biosolids.

Response: The text referred to on page 14-9 has been corrected.

**Comment L4-2:** The commenter presents several lines of reasoning as to the lack of justification and the inconsistencies resulting from the application of GO regulation A(14): the application of biosolids containing a moisture content of less than 50 percent is prohibited.

Response: GO regulation A(14) has been modified as follows: the application of Class B biosolids containing a moisture content of less than 50 percent is prohibited. See also Response to Comment L1-37.



L5

**From:** "Marti Sprinkle" <mcsprink@inreach.com>  
**To:** <verrw@swrcb.ca.gov>  
**Date:** 3/14/04 2:17PM  
**Subject:** Waste Discharge Requirements for Biosolids

Dear Sirs;

Thankfully, a general order will be adopted to use only Type A Biosolids with a Food Crop Limitation. I firmly believe that such an order will solve a great many problems for the future of Agriculture in our fine State of California. In years to come, the citizens will be grateful that such steps were taken to protect the safety of the foods they ingest.

L5-1

I appreciate you time in reading this message and for your futuristic actions.

Sincerely,

Marti Sprinkle  
Planning Commission  
City of Tehachapi

## City of Tehachapi

**Comment L5-1:** The commenter expresses appreciation to the SWRCB for the adoption of a GO with both the Class A Only and Food Crop Limitation Alternatives.

Response: The Board members of the SWRCB will consider all alternatives and all comments submitted.



**DELTA PROTECTION COMMISSION**

14215 RIVER ROAD

P.O. BOX 530

WALNUT GROVE, CA 95690

Phone (916) 776-2290

FAX (916) 776-2293

E-Mail: dpc@citlink.net Home Page: www.delta.ca.gov



February 3, 2004

Wayne Verrill  
Management Practices Support Unit  
Division of Water Quality  
State Water Resources Control Board  
P.O. Box 100  
Sacramento, CA 95812

Subject: Revised Draft Statewide Program Environmental Impact Report (PEIR)  
Covering General Waste Discharge Requirements for Biosolids Land  
Application

Dear Mr. Verrill:

I am writing regarding the notice of public hearing dated January 29, 2004, and the PEIR described above. The Commission itself has not had the opportunity to review the PEIR so these are staff comments only. They are however, based on the Commission's law and adopted plan.

The Commission's plan includes Utilities and Infrastructure Policy P-3 that states:  
*New sewage treatment facilities (including storage ponds) and new areas for disposal of sewage effluent and sewage sludge shall not be located within the Delta Primary Zone...*

The revised PEIR includes **excluded** areas for the application of biosolids that includes the Sacramento-San Joaquin Delta, as did the original EIR. If the proposed General Waste Discharge Requirements continue to include this exemption, they will be consistent with the Commission's adopted plan and serve to protect critical natural resources of the Delta.

L6-1

Thank you for the opportunity to review and comment on the revised PEIR.

Sincerely,

A handwritten signature in black ink, appearing to read 'Margit Aramburu'.

Margit Aramburu  
Executive Director

Cc: Chairman Patrick N. McCarty

## Delta Protection Commission

**Comment L6-1:** The commenter inquires as to whether the Sacramento–San Joaquin Delta is still an excluded area for land application of biosolids, as in the 2000 PEIR.

Response: The Sacramento–San Joaquin Delta is still an excluded area; see the revised draft PEIR, page ES-13.



**KERN FOOD GROWERS AGAINST SEWAGE SLUDGE**

Wm. Bolthouse Farms D.M. Camp & Sons Anton Caratan & Son M. Caratan, Inc.  
Howard Frick Farm Giumarra Vineyards Grimmway Farms  
Jasmine Vineyards Pandol & Sons Sun World, International Marko Zaninovich, Inc.

March 10, 2004

Mr. Wayne Verrill  
Management Practices Support Unit  
Division of Water Quality  
State Water Resources Control Board  
P.O. Box 100  
Sacramento, CA 95812

It is the position of the Kern Food Growers Against Sewage Sludge (KFGASS) that no sewage sludge, of any classification, should be applied over any usable groundwater.

Current United States Environmental Protection Agency (USEPA) and California State Water Resources Control Board (CASWRCB) regulations, which govern the land application of sewage sludge, are not protective of human health, agricultural productivity, and ecological health or water resources. The EPA program, which the SWRCB has used as the foundation for the proposed General Order is terribly flawed. As a result the 503 regulations are fraught with risk, as has been determined in the course of independent evaluations by the Office of the Inspector General and the National Academy of Sciences.

On April 3, 2002 the EPA Office of the Inspector General (OIG) released its report on EPA's sewage sludge rule. It stated that "EPA cannot assure the public that current land application practices (of sewage sludge) are protective of human health and the environment." Among the major deficiencies and concerns raised by the EPA OIG were the following:

- There are "uncertainties" in the science underlying the risk assessment previously conducted on the sludge rule, "related to human health, human exposure pathways, plant toxicity and uptake, effects on wildlife and ground water impacts."
- The sludge rule was based on "limited documentation" regarding the "long term behavior of metals in sludge."
- Methods used for determining the pathogen standards in sludge were "questionable."

NGO1-1

The California State Water Resources Control Board has done little to improve USEPA regulations, stating in the Final Environmental Impact Report (FEIR) on the General Order (regulating sludge applications in California), that the part 503 regulations are based in part on a "willingness to accept some health risk to support the reuse of sludge." Unfortunately, the acceptance of "some health risk" by the USEPA and by extension, the SWRCB, comes at the expense of the communities where sewage sludge is applied. This begs the question, what benefit warrants such a risk?

NGO1-2

It should be noted that the USEPA lowered the health risk standard from the originally proposed conventional limit of 1 in 1,000,000 to 1 in 10,000, a hundred fold decrease in the safety factor.

Personnel at the Fresno office of the Regional Water Quality Control Board stated that sludge generators are rarely inspected more than once a year and sludge is almost never analyzed by them. In November 1998, the California State Auditor issued a report entitled "Lahontan Regional Water Quality Control Board: Has Not Accomplished All of its Regulatory Work and Has Not Always Vigorously Acted Against Water Quality Violators." Comments in the report include the following:

- "The Lahontan RWQCB does not fulfill all of its regulatory responsibilities"
- "Lahontan does not sufficiently monitor waste discharges"
- "Lahontan does not complete all compliance inspections"
- "Lahontan does not ensure that dischargers submit monitoring reports"
- "Lahontan has not always followed up on violations of permit requirements with enforcement actions or issued them promptly"

NGO1-3

There is no independent testing, monitoring or effective oversight of sewage sludge or generators by either the Federal or State government. The RWQCB are not able to meet the requirements of enforcing federal or state sludge regulations.

Sewage sludge, also referred to as biosolids by promoters, are a complex mixture that can contain pollutants from household, commercial and industrial waste waters with organic contaminants (such as pharmaceuticals), inorganic contaminants (metals and trace elements) and pathogens (bacteria, viruses, fungi and parasites). In July of 2002, the National Research Council issued a report and noted the following:

- There is "a lack of exposure and health information on exposed populations."
- There is a "reliance on outdated risk-assessment methods."
- There is "reliance on outdated characterization of sewage sludges."

NGO1-4

- Programs are inadequate to ensure compliance with regulation of sewage sludge.
- EPA's sewage sludge program lacks adequate resources.
- "Since 1993, new chemicals of concern have been identified, such as organic compounds used as flame retardants (i.e., brominated diphenyl ethers), pharmaceuticals and odorants. Chemicals eliminated in earlier selection processes because of data gaps might now be re-evaluated in light of new data."

NGO1-4

Even EPA's own scientists question the science used by that agency to support the disposal of sewage sludge on farmland. The term "sludge magic" was the name given to the theory that clay layers would indefinitely retain the toxic chemicals leached from applied sewage sludge. Of course, this theory is wrong and dangerous.

According to the August 5, 2002 issue of U.S. News and World Report, EPA never performed the studies urged by its own scientists to investigate the effects of sludge on public health and the environment. Conflicts of interest may be a factor. Dr. Al Rubin, former chief of EPA's sludge management branch, oversaw the development of EPA's 503 regulations. In 1994, Rubin went on sabbatical at half salary to work for the Water Environment Federation, formerly named the Federation of Sewage Works Association, a lobby organization. He the returned to EPA to regulate the very industry which had just employed him.

NGO1-5

If the PEIR is an objective evaluation of all options and concerns, why were the reports from the Office of the Inspector General or the report by The National Research Council, issued in July of 2002 excluded from the PEIR? Throughout the EIR, sweeping, unqualified statements are made as if they were fact, even though they are without documentation or support. It is readily apparent that the authors of this document have already determined that the land application of sewage sludge is beneficial as is repeatedly asserted through out the document. There is only a feeble attempt to evaluate the risks and costs of sludge. An honest attempt was not made to conduct a scientifically based risk-benefit analysis.

NGO1-6

Included, please find the testimony of Dr. David L. Lewis which was given before the Committee on Resources and Subcommittee on Energy and Minerals of the House Of Representatives on February 4, 2004. Dr. Lewis was recently fired from U.S EPA, where he had worked as scientist. He has won a whistleblower suit against EPA. In his testimony of Feb.4, Dr. Lewis described the politicization of the peer-review process both inside and outside of the U.S EPA. He described the whole process as "being nothing more than a sham" The efforts to discredit Dr. Lewis in order to perpetuate the cheap disposal of dangerous waste on farmland can only be described as disgusting. By relying so heavily, without question on EPA and obviously with bias here in California the SWRCB has failed to provide a sound scientific framework to safely dispose of sludge.

NGO1-7

Class A EQ sludge should have a much lower pathogen level than class B, though there are legitimate concerns about the adequacy of the very limited testing which is required, and the potential for pathogen re-growth. EQ sludges must meet certain concentration limits (no more than x parts per million) for only nine regulated heavy

NGO1-8

metals and vector reduction requirements. Class A EQ sludge may still have the same endotoxins, nutrients and chemicals as class B.

Even more troublesome are the unknown health and environmental effects from the thousands of pollutants in sewage sludge for which there are no data and therefore no regulation. A glaring example is the possible presence and hazards associated with radioactive materials in sewage sludge. Radioactive materials including (uranium, tritium and radium) can come from many sources, including natural and medical, concentrating in sewage sludge. There are no required tests for salinity, antimony, beryllium, barium, boron, silver and thallium. Some of these, such as beryllium, barium, and boron are mobile, as is cadmium, which is regulated (inadequately). An additional defect is that, the chemical state of heavy metals has not been considered. The ionic state or electrical charge can have a profound effect on the behavior and toxicity of a metal. For instance, chromium II and IV are much less mobile in the soil than chromium VI which has contaminated ground water from man made sources.

Sludge contains heavy metals which are organically complexed. This makes the metals much more mobile than metals that are normally found in nature or whatever small amounts may be found in fertilizers. Field research strongly indicates that some sites, which had previously been treated with sewage sludge, have lost up to half of some sludge applied metals, indicating a threat to groundwater.

EPA's groundwater contamination model does not appear to be based on actual field experience in irrigated areas in the western U.S. This model predicted that it would take a blue dye three years to travel six feet into the soil. In reality, the blue dye traveled six feet in a half hour in field test of that model.

The EPA does not regulate application rates of A EQ sludge. However, Kern County does mandate application rates based on agronomic needs. This is defined as applying only as much sludge as is needed to supply the nitrogen needs of the crop. Calculations using analyses from Los Angeles City's Hyperion Treatment Plant show that sludge will deposit, in some cases, several hundred or even a thousand times or more heavy metals than if a legitimate chemical fertilizer had been used to supply the same amount of nitrogen to grow the crop. Furthermore, there is no incentive not to over apply sludge when it is provided to growers free or growers are paid to take sludge, as is often the case. This practice was not addressed in the PEIR and is a significant contributor to environmental degradation.

Soil scientist Dr. Murray McBride of Cornell University wrote that "the long-term consequences of the application of metal-laden sewage sludges at the loadings permitted by the USEPA-503 regulations are still unknown." Dr. Stanford Tackett of Indiana University described sludge as being "closer to the definition of a toxic waste than it is a fertilizer."

Regulations change. Beginning January 23, 2006, federal public drinking water standards for arsenic will drop from 50 ppb (parts per billion) to 10 ppb. The state of California is considering adopting an even lower drinking water standard that could be 5 ppb or less. In light of this fact, is it logical to load up the soil above our aquifers with more arsenic? The EPA Drinking Water Division has recognized the dangers of lead to

↑  
NGO1-9

NGO1-10

NGO1-11

NGO1-12

↓  
NGO1-12

young children and has officially lowered the lead allowed in drinking water to a goal of zero. In addition, even more stringent standards are required of that water which is extracted from Kern County groundwater banking projects and then exported south for blending with lower quality water.

There remain questions about pathogen kill, even in A EQ. The presence of warmth and moisture present an opportunity for the regrowth of diseases. Dr. Hailu Kinde, DVM, MPVM, wrote to the Kern County Board of Supervisors in September 1999 that "the existence of potential health hazards may not necessarily be reflected by indicator organism densities." According to Straub, Pepper and Gerba's 1993 paper, "Hazards from Pathogenic Microorganisms in Land-Disposed Sewages Sludge," "significant numbers of pathogens exist in sludge even after stabilization and treatment. If these pathogens can remain viable for extended periods of time, groundwater sources beneath sludge disposal and land application sites may become contaminated. Pathogens may not be significantly inactivated or removed by transport through the vadose zone. Once in groundwater, they may travel significant distances from the site. For viruses and parasites, the infectious dose is low... there could be a significant risk of infection on an annual and life time basis." Straub et al stated that there are more than 120 viruses which are excreted by humans and are known to concentrate in sludge. Certainly domestic animals can carry a relatively small percentage of the total pathogens capable of infecting humans. However, the animal industry is an essential industry. They feed people. The correct disposal of sludge is essential. Disposing of sludge where animals may acquire the pathogens therein and begin the disease cycle again is not an essential activity. The most elementary of sound hygienic principles dictate that the cycle of disease and potential introduction of diseases be eliminated. Concentrating disease-laden waste at a POTW and redistributing those diseases back into the environment is a violation of that principle. It is sewage sludge which may well be the source of introduction of pathogens into animal populations, which then may vector diseases full circle to humans again. Infection of wildlife populations by human activities has been well documented by Dr. Rob Atwill (DVM, MPVM, PhD Environmental Animal Health Specialist) from U.C. Davis School of Veterinary Medicine. This should be of great concern when considering that some wildlife species, such as the yellow-bellied marmot, can have a *Cryptosporidium parvum* loading rate which is 30 times greater than cattle. If the marmot or other wildlife species, which associate with water, acquire *C. parvum* from sludge, the potential for contaminating surface water is increased. The statement that the animal industry is not regulated (14-33) is absolutely false. The authors of this document would do well to utilize experts on the subject such as Dr. Deanne Meyer, PhD., Animal Waste Management Specialist from the University of California at Davis. She has an active outreach program which includes many training courses for the dairy industry in which she educates people about the many regulations affecting the animal industry, especially water which has been exposed to dairy waste. The dairy industry is expected to closely follow regulations.

Surfactants are a major component of sludge. Surfactants tend to actively desorb or release toxins such as trichlorobenzene and other organic pollutants from the soil thus putting groundwater at risk ("Effects of Surfactants on Sludge Dewatering and Pollutant Fate," Water Resources Center, University of Delaware, August 1, 1993).

NGO1-14

NGO1-15

The disposal of nearly 650 toxic chemicals must be reported to EPA under the Toxics Release Inventory. In 2000, more than 27,000,000 pounds of toxics were disposed of in California's publicly owned treatment works (POTW's). That is equal to more than 560 truckloads of toxic chemicals. The majority of these chemicals end up concentrated in the sewage sludge end-product. Some of the chemicals listed which are of particular concern, due to their potential to contaminate ground water, include creosote, ethylene glycol, methyl ethyl ketone, MTBE (Methy tert-butyl ether), phenol, sodium nitrite, sulfuric acid, tetrachloroethylene and more. The TRI website is at [www.epa.gov.tri](http://www.epa.gov.tri).

Three years after the adoption of Kern County's ordinance, the best recommendation for the tolerance for PCB in sludge has dropped from 50 parts per million (Kern's current threshold) to 1 or 10 parts per billion, a 5,000 fold difference.

Not all of the chemicals which may be considered dangerous, now or in the future, are currently listed as such in EPA's Toxics Release Inventory. Rather than waiting for more complete information regarding the behavior, fate and risk of the many other chemicals found in sludge, standards were promulgated only "for those pollutants and use or disposal practices for which sufficient information exists." In other words there are no protections in place for those chemicals of which little is known and yet USEPA and CASWRCB encourage society to assume these unknown risks.

A landmark study by the American Society of Civil Engineers clearly identified a significant number of toxic organic chemicals that are typically found in sewage sludge including PCBs, pesticides and many chlorinated compounds. Dr. Donald Lisk from Cornell University's College of Agriculture and Life Sciences estimates that typically 100-200 companies will flush their waste into a single treatment plant and that literally thousands of chemicals may be present in a single sludge sample. Only a handful of these chemicals are tested for in even the best monitoring programs. In addition, newly formed toxic substances are created as waste products break down in sludge. Dr. Lisk has stated that, "the concept of 'well engineered' sludge is a myth. There is no sound scientific basis for limiting levels of potential toxicants in sludge since we do not know the identity of most of them. Even if both of these problems didn't exist, it is extremely unlikely that any feasible monitoring and enforcement program could ensure that application regulations are met."

"Little is known about the environmental occurrence of many chemicals we use to maintain the quality of our daily lives," said Robert Hirsh, associate director for water at the U.S. Geological Survey. According to a fact sheet prepared by the Sanitation Districts for Los Angeles County, "many pharmaceuticals alter dramatically as they break down and the amalgam of substance mixed in the waste stream makes it nearly impossible to filter out certain substances, especially at such minute levels" (Western Water, May/January 2002). European scientists have determined that the source of drugs in European drinking water is from human waste. Metabolites originating from medical substances have been measured in groundwater. A number of pharmaceuticals classified as non-biodegradable and as being persistent include (but not limited to), Amitriptyline (antidepressant), Chlorhexidine (disinfectant), Codeine phosphate (opioid analgesic), Erythromycin (antibacterial), Naproxen (anti-inflammatory), Tetracycline (antibacterial),

NGO1-16

NGO1-17

many cortisone compounds and testosterone. Furthermore, there is mounting evidence that many synthetic compounds can disrupt hormonal systems. These 'endocrine disrupters' include DDT, some PCB congeners and commonly used phthalates (which are compounds in plastics) and bisphenol A. Several of the polychlorinated naphthalenes (PCNs) have dioxin like activity. For many compounds, physico-chemical data sets are at best limited and at worst not available. (Assesment of Organic Contaminant Fate In Waste Water Treatment Plants I: Selected Compounds and Physiochemical Properties by R.E. Alcock, A. Sweetman and K.C. Jones, Chemosphere, 1999, Vol. 38). Additional mobile compounds which are predicted to be a threat to groundwater are chloroanilines, mononitrophenols, dinitrotoluene, and bis (2-chloroethoxy) methane. (R. Duarte-Davidson, et.al, The Science of the Total Environment, Vol. 185 1996). As previously mentioned, certain chemicals in sludge are endocrine disrupters or hormone mimicking compounds. A paper published by S.F. Arnold, et al in Science Vol. 272 on June 7, 1996 stated that some of the estrogenic compounds occur as mixtures in the environment (sludge) and their combined action has not been well studied. A combination of any two of these chemicals produced a synergistic increase in activity in screening tests. The mixture was 160 to 1600 times more potent than the single individual chemicals alone. PCB's of which L.A. County reported receiving 223 pounds in 2000, are one of the compounds detailed as causing this effect.

NGO1-17

Attached, please find the abstract entitled "Organic Wastewater Contaminants in Biosolids and Biosolid-Derived Products" written by several members of the U.S Geological Survey. It was stated that the presence and environmental fate of organic wastewater contaminants (OWCs) such as pharmaceuticals, personal care products, endocrine disruptors, industrial chemicals and pesticides has not been evaluated, particularly as a source to surface or groundwater. More than 35 OWCs were identified and quantified in sewage sludge. Future research will focus on the fate and transport of OWCs in the soil "and to evaluate the potential for OWCs from sludge to reach groundwater"

The issue of metabolites, breakdown products and interactions with other chemicals and the environment has not been addressed by the USEPA or the CASWRCB. A recent article in the Journal of Photochemistry and Photobiology A 2003, documents that triclosan, an antimicrobial, made by the ton and added to hand soaps, clothing and other items, which ends up in sewage, can degrade into a dioxin when exposed to sunshine in the presence of water. The U.S.G.S. found triclosan to be a widespread water pollutant. There is a potential greater danger in that triclosan may acquire a chloride atom, as much water is chlorinated, and form more toxic dioxin species. Kristopher McNeil, a chemist and coauthor of the paper said "finding this degradation product from triclosan should be a warning to look for what happens down stream to other common compounds whose basic structure suggests that they could be precursors to dioxin or other toxic chemicals." In addition, the current recommended dioxin tolerance of 300 parts per trillion is now regarded as too high. Kern County's dioxin tolerance is 50 parts per million.

NGO1-18

What drives the need to use farms as a disposal site for sewage sludge? The EPA and SWRCB have chosen to ignore glaring risks for the small benefit of providing a least cost disposal option for POTWs. This PEIR claims other means of disposal are limited and expensive. Little effort has been devoted to aggressively finding other options.

NGO1-19

Attached, please find the newspaper article in which H.M. Holloway in Lost Hills is in the permitting process to fill old gypsum mines with sewage sludge. This is a low cost alternative which presents fewer risks than most other options. Certainly there must be additional options like this available.

We have repeatedly asked a question of EPA that is yet to be answered. If sewage sludge is no longer safe enough to dump in the ocean as it once was, why is it's disposal encouraged on our farmland, and over our groundwater? The television news program "60 Minutes" reported the role of USEPA in the contamination of Glenville's groundwater by MTBE. The pollution of Glenville's groundwater is small compared to the below-ground plumes of MTBE which currently threaten some of Bakersfield's drinking water. In spite of ample evidence that MTBE would contaminate groundwater, EPA mandated it's use as a replacement for lead in gasoline. Only now is the extent of the harm being realized that has been done to the drinking water supplies by MTBE in the United States. Some of the very same individuals at EPA have been involved in both the MTBE debacle and sewage sludge disposal program. With knowledge and forethought, USEPA has embarked on a dangerously cavalier and irresponsible policy which is certain to ultimately degrade this nation's water supplies on a much larger scale than any terrorist action ever could. In view of the lack of accountability by USEPA or the CASWRCB, it has become incumbent upon individual counties to assume responsibility for the protection of our resources (as is allowed by the 503 Rule). There is ample evidence that the contaminants in sewage sludge will very likely pollute groundwater. There is no evidence that EPA's 503 Sludge Rule or the SWRCB regulations will protect our groundwater from degradation by sewage sludge. Nor is there any benefit from the land application of sewage sludge which justifies these risks to our groundwater and other resources. Therefore, simple logic and prudence would dictate that no sewage sludge applications of any kind should be made over any usable groundwater. To reiterate, the EPA Office of the Inspector General 2002 report, the "EPA cannot assure the public that current land application practices (of sewage sludge) are protective of human health and the environment."

Respectfully,



Kern Food Growers Against Sewage Sludge

NGO1-20

## Kern Food Growers Against Sewage Sludge

**Comment NGO1-1:** The commenter cites findings of the 2002 report of the U.S. EPA Office of the Inspector General (OIG) entitled *Land Application of Biosolids* that U.S. EPA cannot assure the public that current land application practices are protective of human health and the environment. The commenter goes on to list the following three “major deficiencies and concerns raised by the EPA OIG”: there are uncertainties in the science of the risk assessment underlying Part 503 rule; the rule was based on limited documentation of the long term behavior of metals in sludge; and the methods used in determining the pathogen standards in Part 503 were questionable.

**Response:** The OIG issued *Land Application of Biosolids* in March 2002 in response to a series of allegations submitted by the National Whistleblower Center of shortcomings in the Part 503 Rules and as a follow up to its 2000 audit of the regulations relating to biosolids applied to land. *Land Application of Biosolids* is a status report on the U.S. EPA’s land application regulations and did not contain any recommendations for U.S. EPA actions. By its own terms, it was not intended to be either an audit or an evaluation of U.S. EPA’s activities. Based on the allegations, the report made the following basic findings of broad applicability:

- U.S. EPA and State Biosolids Program Staff. The U.S. EPA had reduced the number of staff assigned to the biosolids program and the states’ staffing of biosolids programs varied significantly;
- Delegation of Biosolids Programs to States. Although the CWA authorizes U.S. EPA to delegate administration of the biosolids program to the individual states, only five states had been granted formal delegation and therefore the U.S. EPA cannot be certain that residents in non-delegated states are provided the same level of protection as in the Federal program;
- Responding to and Tracking Health Complaints. Of 21 complaints related to sludge exposure that the National Whistleblower Center alleged the U.S. EPA had failed to investigate, 14 had been investigated by state or federal officials, 5 were not reported to state or federal officials, and 2 were not biosolids related;
- Risk Assessment and Pathogen Testing Concerns. There are indications that more research on pathogen testing is needed to address risk assessment uncertainties. At the time, the U.S. EPA did not plan to undertake further risk assessment.
- U.S. EPA’s Relationship with a Professional Association. The money that U.S. EPA provided to the Water Environment Federation was largely Congressionally mandated and U.S. EPA had no discretion in awarding the funds.
- Public Acceptance Concerns. Despite regulatory safeguards, public acceptance of the use of biosolids is mixed and a number of counties and cities have banned or restricted land application.

The commenter has taken their points out of context. The reference to U.S. EPA being unable to assure the public of the safety of biosolids relates to the low priority given by the U.S. EPA to providing biosolids coordinators to oversee biosolids application in each state (as measured by the number of full time employees assigned to oversight). Because there is insufficient staff, the U.S. EPA cannot assure that biosolids are being applied in compliance with the Part 503 rules.

With regard to the uncertainties in the science underlying the risk assessments, the OIG status report is citing the preamble to the Part 503 rule itself, not a conclusion of the OIG. In fact, in a footnote on page 16, the status report states that “[s]cientific uncertainty is an expected factor in environmental risk assessments. These uncertainties may include the usual variance that exists in scientific measurements and data gaps.”

The statement from the OIG status report relating to limited documentation of long-term metals behavior is also a citation to the preamble of the Part 503 rule. It is not a conclusion of the OIG status report. In fact, the OIG status report goes on to say that information obtained since the formulation of the Part 503 rule supports the preamble’s claim that metals concentrations are lower than in the past. Preliminary data provided to the OIG by the U.S. EPA indicates that about 85% of the land applied biosolids now meet the same low metal standards that are set for EQ biosolids. The OIG suggests that while these preliminary data are encouraging, they show the Part 503 rule’s research results with respect to metals are out of date. The OIG suggests that a study to verify this level of metals concentrations “might help to alleviate some of the concerns about the long-term behavior of metals in biosolids.”

The discussion of “questionable” methods in the OIG status report relates to a reference to the NRC’s 1996 report *Use of Reclaimed Water and Sludge in Food Crop Production* which both concluded that the Class A biosolids standards appear to be adequate for public health protection and stated that the method used to determine whether the pathogen standard can be met was questionable. The 1996 report recommended that the test used to detect salmonella should be used in concert with the test for fecal coliform bacteria, not by itself, in order to provide greater surety.

**Comment NGO1-2:** The commenter states that the Board has done little to improve U.S. EPA regulations that are based upon a willingness to accept some level of health risk to support biosolids reuse. The commenter questions what benefit warrants such a risk.

Response: Biosolids are a byproduct of the treatment of wastewater. The Part 503 regulations are intended to protect the environment and public health by limiting exposure to pathogens and metals. Biosolids are treated to federal standards under the Part 503 rule and an annual report is submitted to U.S. EPA by every POTW describing their compliance with the pertinent regulations contained in that rule. Land application offers a beneficial use for these biosolids.

There is a discussion of the benefits of applying biosolids to land in Finding 7 of the proposed GO. It identifies the following benefits of biosolids as a soil amendment:

- Biosolids provide nitrogen and phosphorus, basic nutrients for plant growth.
- Biosolids contain micronutrients, including various salts and metals, which are necessary for plant growth.
- The addition of biosolids to soil can enhance soil structure, increase water retention capability, promote soil aggregation, and reduce bulk density. Organic material in the biosolids assists in maintaining soil pores.
- When biosolids have been chemically stabilized with lime, this can increase the soil pH and improve permeability.

The commenter is incorrect that the Board has not improved upon the protections provided by the U.S. EPA regulations on the land application of biosolids. The prohibitions, discharge specifications, and storage and transportation specifications described in the proposed GO include numerous requirements that are more restrictive than the Part 503 rule. These include, but are not limited to the following: storage, transport or application of biosolids shall not cause a nuisance; unless the application site has a 33-foot wide vegetative buffer along its edges, irrigation runoff is prohibited for 30 days after application of the biosolids; biosolids shall not be applied to areas subject to gully erosion or washout or on slopes exceeding 25%; biosolids shall not be applied in excess of the “Risk Assessment Acceptable Soil Concentration” (which exceeds federal standards); application to slopes in excess of 10% will only be applied if a professional report is submitted with the NOI for approval by the RWQCB; and staging and biosolids application areas must be set back from specific features and residences. All of these provisions are intended to reduce the risk of either pathogens or metals from biosolids.

For an additional discussion of risk, see Master Response #1.

**Comment NGO1-3:** The commenter states that there is no independent testing, monitoring, or effective oversight of biosolids or generators by either federal or State government. Further, The RWQCBs are not able to meet the requirements of enforcing federal or State biosolids regulations.

Response: The GO testing, implementing, monitoring, record keeping, and reporting requirements are the responsibility of the biosolids generator and landowner of the application site. All analyses must be conducted by a laboratory certified by the California Department of Health Services. The generator and landowner are required to allow RWQCB staff to enter premises, inspect records, inspect facilities and equipment, and conduct sampling or monitoring, as requested at reasonable times.

**Comment NGO1-4:** The commenter notes that biosolids are a complex mixture that can contain pollutants from household, commercial, and industrial waste waters with organic contaminants, inorganic contaminants, and pathogens. The commenter cites statements from the NRC’s July 2002 *Biosolids Applied to Land* report that assert there is:

- a lack of information about exposed populations,

- a reliance on outdated risk-assessment methods,
- a reliance on outdated characterization of sewage sludges,
- inadequate resources for U.S. EPA's sewage sludge program, and
- additional chemicals of concern (including chemicals eliminated in earlier selection processes) that should be studied for inclusion in the biosolids program.

Response: See Master Response #1.

**Comment NGO1-5:** The commenter references information about the U.S. EPA and biosolids in a national news media publication.

Response: Receipt of this information is acknowledged.

**Comment NGO1-6:** The commenter asks why the March 2002 OIG and July 2002 NRC reports were not included in the PEIR. The commenter states that the authors of the PEIR “have already determined that land application of sewage sludge is beneficial” and there is only “a feeble attempt to evaluate the risks and costs of sludge.” The commenter asserts that “[a]n honest attempt was not made to conduct a scientifically based risk-benefit analysis.”

Response: The OIG and NRC reports were discussed in Chapters 2 and 5 of the draft PEIR, respectively. The discussion of the NRC's *Biosolids Applied to Land* and the U.S. EPA's final response to that report can be found beginning at page 5-2. Other brief references to the report are found elsewhere as well. A discussion of the OIG report is found on page 2-8 of the draft PEIR.

“Beneficial use” is a long accepted term for the land application of biosolids (sewer sludge that has been treated in accordance with U.S. EPA's Part 503 regulations) and is used in that context in the draft PEIR. For example, the term is found in the U.S. EPA's *A Plain English Guide to the EPA Part 503 Biosolids Rule*, issued in September 1994. The term is never used in reference to any untreated form of sewage sludge and the draft PEIR does not imply that the land application of untreated sewage sludge that does not meet the requirements of the Part 503 rule is a beneficial use.

The federal Part 503 rule was enacted by the U.S. EPA in 1993 on the basis of extensive risk assessments of pathogen and chemical exposure on human health. In the words of the NRC's *Biosolids Applied to Land Report* “[t]here is no documented scientific evidence that the Part 503 rule has failed to protect public health.” In addition, as summarized in the draft PEIR, the U.S. EPA is engaged in a number of initiatives to collect new information, determine the effectiveness of the existing Part 503 rule, and update the Part 503 rule as may be indicated by new information.

There is substantial evidence that existing U.S. EPA regulations are adequate to protect human health and the environment, based on the risk analyses undertaken by the U.S. EPA. The draft PEIR also summarizes other opinions, including the October 2003

petition of the Center for Food Safety that requested that the U.S. EPA enact an emergency moratorium on the land application of biosolids (draft PEIR, page ES-19), investigations undertaken by researchers at Cornell University and the University of Georgia into the health of residents near biosolids application sites (draft PEIR, pages 5-9 and 5-35) and stories in the popular press regarding potential health hazards from the land application of biosolids (draft PEIR, page 5-9).

The Board is relying upon the risk assessments prepared for the federal rulemaking, and is not undertaking an independent risk assessment as part of this PEIR. Such an assessment is not required under CEQA either to establish the validity of a duly adopted federal regulation, or to reconcile a disagreement among experts. The draft PEIR's approach is consistent with State CEQA Guidelines Section 15151 which states, in part, that "[d]isagreement among experts does not make an EIR inadequate, but the EIR should summarize the main points of disagreement among the experts."

**Comment NGO1-7:** The commenter references the testimony of Dr. David L. Lewis to the Committee on Resources and Subcommittee on Energy and Minerals of the House of Representatives in February 2004. Dr. Lewis was sharply critical of the peer-review process of the U.S. EPA and its current Part 503 rule. The commenter feels that by relying heavily on U.S. EPA information, the Board "has failed to provide a sound scientific framework to safely dispose of sludge."

Response: The federal Part 503 rule was enacted by the U.S. EPA in 1993 on the basis of extensive risk assessments of pathogen and chemical exposure on human health. In the words of the NRC's *Biosolids Applied to Land Report* "[t]here is no documented scientific evidence that the Part 503 rule has failed to protect public health." In addition, as summarized in Chapter 5 of the draft PEIR (beginning on page 5-2), the U.S. EPA is engaged in a number of initiatives to collect new information, determine the effectiveness of the existing Part 503 rule, and update the Part 503 rule as may be indicated by new information.

There is substantial evidence that existing U.S. EPA regulations are adequate to protect human health and the environment, based on the risk analyses undertaken by the U.S. EPA. The draft PEIR also summarizes other opinions as the risk of the land application of biosolids, including an investigation undertaken by Dr. Lewis into the health of residents near biosolids application sites (draft PEIR, pages 5-9 and 5-35).

The Board is relying to a large extent upon the federal rulemaking. The U.S. EPA has determined that the Part 503 rule affords an acceptable level of protection against risk. The proposed GO includes additional requirements to further reduce risk to soils, water quality, and human health. An independent scientific analysis is not required under CEQA either to establish the validity of a duly adopted federal regulation, or to reconcile a disagreement among experts. The draft PEIR's approach is consistent with State CEQA Guidelines Section 15151 which states, in part, that "[d]isagreement among experts does not make an EIR inadequate, but the EIR should summarize the main points of disagreement among the experts."

**Comment NGO1-8:** The commenter states that EQ biosolids must meet concentration limits for nine chemicals and meet vector reduction requirements. However, the commenter believes that EQ biosolids may still have the same level of endotoxins, nutrients, and chemicals as Class B biosolids.

Response: EQ biosolids must meet the same pathogen and vector attraction requirements as Class A biosolids. In addition, EQ biosolids must test at lower pollutant concentrations for nearly all of the pollutants (i.e., arsenic, cadmium, chromium, copper, lead, mercury, selenium, and zinc) for which limits are established under the Part 503 rule. EQ biosolids may test at the same concentration of nickel. There are no established concentration limits for endotoxins, some nutrients, and most chemicals. Whether EQ biosolids have the same levels as Class B biosolids is unknown – the heat, bacterial, or chemical processes needed as a part of EQ biosolids treatment may reduce concentrations relative to Class B biosolids either through volatilization or biological digestion, since Class B is not subject to that level of treatment. At the same time, some of these materials may be resistant to breakdown by heat or biological action and may not be affected by treatment to reach EQ standard.

**Comment NGO1-9:** The commenter is concerned about the unknown health and environmental effects of the thousands of pollutants in sewage sludge (and presumably biosolids) for which there is no data or regulation. This includes the possible presence and hazards associated with radioactive materials.

Response: The PEIR's conclusion that land application of biosolids does not pose a significant risk to human health or the environment was based on, among other information, the extensive chemical screening process or risk assessments conducted by EPA, the SWRCB's subsequent literature review, and studies by the National Academy of Sciences. As confirmed by the court in *County of Kern v. SWRCB*, 2003 WL 135068 (Cal. App. 3 Dist.), pp. 19-20), this information is more than adequate to support the conclusions reached in the PEIR.

As recommended by the NRC, and pursuant to the CWA, the U.S. EPA continues to screen chemicals for potential health risks. However, the vast number of chemicals (and the continuous addition of new chemicals and compounds) makes a rapid completion of this task infeasible. The draft PEIR discusses the U.S. EPA's October 2003 rulemaking on dioxins, a family of chemicals formed by the burning of chlorine-based chemical compounds (page 5-4). As a result of an exhaustive study over a period of 4 years, U.S. EPA determined that the level and environmental risk of dioxins in biosolids was acceptably low and decided not to address dioxins in the Part 503 rule.

As discussed at page 5-5 of the draft PEIR, the federal ISCORS issued a series of draft reports in November 2003 discussing the potential presence of radioactive materials in biosolids. ISCORS concluded that there is not a widespread health concern. Nonetheless, ISCORS found that long-term exposure to radon could be a problem where biosolids had been applied to land for periods of 50–100 years unless POTWs continue to act to avoid radioactive materials in the wastestream entering their plants. Mitigation Measure 5-4 of the PEIR addresses this issue. In response to this and other comments,

the discussion of the ISCORS reports has been expanded, and the requirements of Mitigation Measure 5-4 have been clarified.

**Comment NGO1-10:** The commenter states that there are no required tests for salinity, antimony, beryllium, barium, boron, silver, and thallium. The commenter notes that some of these are mobile and would potentially have health and environmental effects.

Response: See Response to Comment NGO1-9.

**Comment NGO 1-11:** The commenter states that the chemical state of heavy metals (which may affect the mobility of the metal in the environment) has not been adequately addressed in the PEIR.

Response: Chapter 3 (“Soils, Hydrology, and Water Quality”) of the draft PEIR discusses trace elements and heavy metals beginning on page 3-13.

See also, Responses to Comments NGO1-7 and NGO1-9.

**Comment NGO 1-12:** The commenter expresses concern that the unregulated application of EQ biosolids could lead to excessively high loadings of heavy metals, and that this practice was not addressed in the revised draft PEIR.

Response: See Response to Comment NGO 2-11.

**Comment NGO 1-13:** The commenter cites recent and forthcoming changes in drinking water standards for lead and arsenic, and questions the relationship with land application of biosolids.

Response: See Response to Comment NGO 2-3.

**Comment NGO 1-14:** The commenter is concerned about the viability of pathogens that survive the biosolids treatment process and the effectiveness of indicator organisms as indicators of potential health hazards. The commenter contends that POTWs concentrate wastestream-carried pathogens in the biosolids produced at the end of the treatment process. The concern includes potential travel of pathogens into groundwater and domestic animals subject to human consumption. The commenter also notes that the statement on page 14-33 of the draft PEIR that the use of animal manure is not regulated is false.

Response: The commenter’s concerns were also discussed in the NRC’s *Biosolids Applied to Land* report. The NRC recommended that:

- U.S. EPA conduct national field and laboratory surveys to verify that Class A and Class B treatment processes work as assumed
- U.S. EPA support development, validation, and standardization of pathogen detection and quantification methods for the pathogens regulated under Part 503.

The NRC also stated that research is needed on pathogen survival of treatment processes and field verification of the effectiveness of treatments.

The U.S. EPA, in its final response to *Biosolids Applied to Land*, has included three projects (#3, #4, and #11) in its fiscal year 2004-2005 work program that will implement the recommendations of the NRC report. Under project #3, U.S. EPA will develop or improve analytical methodology for detecting pathogens in biosolids and determining the effectiveness of pathogen reduction or elimination treatment programs. This will include optimizing the method for testing for selected pathogens and improving methods for detecting viruses. Project #4 consists of field studies to evaluate management techniques for biosolids in order to determine whether the regulatory pathogen and chemical limits are being met. Project #11 involves the U.S. EPA's publication of the proceedings of its June 2001 workshop in Cincinnati, OH on emerging infectious disease agents and issues associated with animal manures, biosolids, and other similar by-products. The U.S. EPA expects to publish the proceedings in 2004.

In addition to these on-going actions, U.S. EPA updated its publication *Environmental Regulations and Technology: Control of Pathogens and Vector Attraction in Sewage Sludge* in July 2003 to clarify pathogen testing methods and frequencies and to encourage additional testing.

There is currently insufficient information available on this issue to formulate an informed policy or regulation as part of the proposed GO. The U.S. EPA is conducting additional studies and, when that information becomes available, will consider amending the pertinent provisions of the Part 503 rule. Under the proposed GO, future revisions to the Part 503 regulations will also be incorporated into the GO for the land application of biosolids.

The U.S. EPA adopted regulations on the disposal of animal wastes from concentrated animal feeding operations (COFAs) in April 2003. These require that COFAs develop and implement a nutrient management plan that includes, among other things, protocols to land apply manure and process wastewater at agronomic rates, minimize the movement of nitrogen and phosphorus to surface waters, and to control runoff. Under these regulations, all COFAs are considered point sources and are subject to NPDES permitting requirements in order to avoid discharges to waters of the United States. NPDES permits are issued by the RWQCBs. The COFA regulations do not regulate either the pathogen content or vector attraction characteristics of animal manures. The statement on page 14-33 is revised to reflect this regulation. The conclusions remain the same.

**Comment NGO 1-15:** The commenter raises a concern that the presence of surfactants in biosolids will release toxins such as trichlorobenzene and other organic pollutants from the soil, thus putting groundwater at risk of contamination.

Response: The issue of surfactants was raised in the *Biosolids Applied to Land* report, particularly in relation to chemical components of the surfactants. The NRC recommended that U.S. EPA conduct a new national survey of chemicals in biosolids,

including categories of chemicals, such as surfactants, odorants, and pharmaceuticals, that had not been previously evaluated.

In response, U.S. EPA has committed in its fiscal year 2004–2005 to undertake a targeted national study of pollutants in biosolids (Project #5) to help fill data gaps. The U.S. EPA will design the survey in 2005, based on stakeholder involvement and the results of current research projects. It expects to include new and emerging chemicals, as well as chemicals included in the 1988 National Sewage Sludge Survey.

There is currently insufficient information available on this issue to formulate an informed policy or regulation as part of the proposed GO. The U.S. EPA is conducting additional studies and, when that information becomes available, will consider amending the pertinent provisions of the Part 503 rule. Under the proposed GO, future revisions to the Part 503 regulations will also be incorporated into the GO for the land application of biosolids.

**Comment NGO 1-16:** The commenter notes that little is known about the environmental occurrence of many chemicals we use to maintain our quality of life.

Response: See Response to Comment NGO1-9.

**Comment NGO 1-17:** The commenter raises concerns about the presence of pharmaceuticals (including metabolized pharmaceuticals) and endocrine disruptors in biosolids and their potential threat to health and groundwater.

Response: The issue of pharmaceuticals was raised in the *Biosolids Applied to Land* report, particularly in relation to chemical components of the surfactants. The NRC identified these largely unstudied chemicals to be of potential concern. It recommended that U.S. EPA's new national survey of chemicals in biosolids include categories of chemicals such as surfactants, odorants, and pharmaceuticals that had not been previously evaluated. The survey would be the basis for future risk assessment and screening as part of the U.S. EPA's periodic review of the Part 503 rules.

In response, U.S. EPA has committed in its fiscal year 2004-2005 to undertake a targeted national study of pollutants in biosolids (Project #5) to help fill data gaps. The U.S. EPA will design the survey in 2005, based on stakeholder involvement and the results of current research projects. It expects to include new and emerging chemicals, as well as chemicals included in the 1988 national survey.

There is currently insufficient information available on this issue to formulate an informed policy or regulation as part of the proposed GO. The U.S. EPA is conducting additional studies and, when that information becomes available, will consider amending the pertinent provisions of the Part 503 rule. Under the proposed GO, future revisions to the Part 503 regulations will also be incorporated into the GO for the land application of biosolids.

**Comment NGO 1-18:** The commenter raises a concern that triclosan, an antimicrobial agent used in soaps and other items, can degrade into a dioxin when exposed to sunshine

in the presence of water. The commenter believes that the current recommended dioxin tolerance of 300 parts per trillion is now regarded as too high.

Response: As discussed in Chapter 5 (beginning on page 5-14) of the draft PEIR, the U.S. EPA considered the necessity of regulating dioxin levels under the Part 503 rule. As a result of a 4-year study and risk assessment, the U.S. EPA concluded that dioxins in biosolids do not pose a significant human health threat. The U.S. EPA's 2001 Dioxin Update to the 1988 National Sewage Sludge Survey found that dioxin levels in treated sewage had declined since 1988.

**Comment NGO 1-19:** The commenter asks the question "what drives the need to use farms as a disposal site for sewage sludge?" The commenter claims that the U.S. EPA and SWRCB have "chosen to ignore glaring risks for the small benefit of providing a least cost disposal option for POTWs. This PEIR claims that other means of disposal are limited and expensive. Little effort has been devoted to aggressively finding other options." The commenter suggests disposal in an old gypsum mine as a low cost alternative with fewer risks.

Response: Land application of biosolids allows the beneficial recycling of a waste product. Benefits to agricultural soils and productivity are detailed in GO Finding #7. Identified risks are addressed to the extent of current scientific knowledge in the above responses to comments, and elsewhere in the revised draft and final PEIR. A number of other means of disposal are analyzed in Chapter 14 for environmental impacts in comparison to land application. Some other means are already in use, but other means are not necessarily environmentally superior to land application. The PEIR describes other disposal options and sets forth a reasonable range of alternatives to the proposed GO.

The commenter suggests disposal in an old gypsum mine that is already functioning as a permitted landfill. Transportation costs and impacts would still apply. The landfill alternative is discussed in Chapter 14 of the revised draft PEIR as part of the analysis of the Land Application Ban and Food Crop Limitation Alternatives. Nothing in the U.S. EPA Part 503 and SWRCB GO regulations would prohibit or necessarily limit permitted landfill disposal.

**Comment NGO 1-20:** The commenter asks, "If sewage sludge is no longer safe enough to dump in the ocean as it once was, why is it's disposal encouraged on our farmland, and over our groundwater?" Other comments are made about the U.S. EPA and MTBE, and previous comments are repeated in conclusion.

Response: There are substantial benefits to land application that counterbalance risks: use of natural slow-release fertilizer as an alternative to quick-release chemical fertilizers, improvement of soil quality and water-retention capacity from input of organic matter, recycling of human waste products, and addition to terrestrial carbon storage to reduce atmospheric carbon build-up. (See also GO Finding #7.) Further, the soil is nature's self-cleansing environment for natural terrestrial waste: "Introduced organisms usually cannot persist in the highly competitive, diverse, multi-organism associations that exist within the many habitats and niches within the soil. These are responsible for the soil

self-cleansing that provides self-protection against the many plant and animal pathogens introduced to this milieu by both natural and anthropogenic means” (Sumner 2000).

The issue of the U.S. EPA and MTBE is outside the scope of this PEIR. Other summary comments in conclusion have been addressed above or elsewhere (see Master Response #1 and Response to Comment NGO 2-5).



## NGO-2

March 12, 2004

Mr. Wayne Verrill  
Management Practices Support Unit  
Division of Water Quality  
State Water Resources Control Board  
P.O. Box 100  
Sacramento, CA 95812

Re: California Farm Bureau Federation's Comments on the State Water Resource Control Board Revised Draft Statewide Program EIR for General Waste Discharge Requirements for Biosolids Land Application

Dear Mr. Verrill:

The California Farm Bureau Federation (CFBF) is a voluntary, private, nonprofit corporation representing more than 89,000 members and over 80% of California's commercial agriculture. CFBF is concerned that the State Water Resource Control Board's (SWRCB) Revised Draft Statewide Program EIR (Draft PEIR) fails to sufficiently consider and analyze all the impacts **and benefits** associated with the Class A Only and Food Crop Limitation alternatives. CFBF is not challenging the underlying goal of the Draft PEIR, to provide basic statewide regulations for the land application of biosolids. Rather, CFBF asserts the Draft PEIR's analyses of the two alternatives are deficient and must be properly reconsidered before the Draft PEIR can be adopted.

The Draft PEIR's conclusions that the Class A Only and Food Crop Limitation alternatives would not be more protective of the public health and safety, as compared to the original PEIR, are not supportable. First, the Draft PEIR improperly focuses almost exclusively on the economic costs of compliance for the sewage sludge generators, who collect the health and safety risks associated with primarily urban-generated wastes and concentrate them in their sewage sludge.<sup>1</sup> Second, the Draft PEIR fails to properly consider the impacts on the rural recipients of the sewage sludge, to whom are shifted the entire burden of those concentrated urban waste disposal health and safety risks. Finally, the Draft PEIR fails to consider the health and safety

NGO2-12

---

<sup>1</sup> Draft PEIR, pp. 2-3, 2-5. Note: CFBF uses the terms "biosolids" and "sewage sludge" interchangeably. In general, the USEPA's Part 503 regulations refer to this material as "sewage sludge." Only in subsequent guidance documents was the term "biosolids" introduced.

**benefits** that would accrue both to rural and urban populations from the adoption of one or both of the alternative approaches.

**A. The relevant focus for protecting persons from health risks associated with the use of biosolids must be the rural populations and environment where the biosolids are applied, not the urban “public at large,” which generates but largely does not land apply biosolids.**

The USEPA's Part 503 regulations ostensibly are designed to protect the “public at large” from the health risks and effects of the land application of sewage sludge. However, as was noted in the original PEIR, the Part 503 regulations are based, in part, on a “willingness to accept some health risk to support the reuse of sewage sludge.”<sup>2</sup> Yet the generally urban “public at large” is not at any risk from the land application of sewage sludge since the vast majority of sewage sludge, and the risks attendant to it, are shipped from urban communities for disposal in rural, agricultural communities.<sup>3</sup>

NGO2-1

Hence, the acceptance of “some health risk” by the USEPA on behalf of the general public comes almost exclusively at the expense of farmers and their communities where the sewage sludge is applied. As the National Research Council (NRC) recently confirmed:

To date, epidemiological studies have not been conducted on exposed populations such as biosolids appliers, farmers who use biosolids on their fields, and communities near land-application sites.<sup>4</sup>

**1. There is no dispute that the land application of sewage sludge will increase the level of toxic chemicals and pollutants in the soils of land application sites.**

There clearly are negative impacts due to the land application of sewage sludge. According to the NRC:

NGO2-2

Community-wide source control and industrial wastewater pretreatment programs have resulted in significant reduction of toxic pollutants in

<sup>2</sup> 2001 PEIR, Master Response 12, p.2-13.

<sup>3</sup> In California, approximately 5584 dry tons of sewage sludge are generated every day by 120 publicly owned treatment works (POTWs). More than 70% of this material is generated by just 10 POTWs. Of this amount, approximately 48% is land applied, with the majority of the land applied material coming from the southern counties (i.e., Los Angeles, Santa Ana and San Diego) as well as other large urban centers such as the San Francisco bay area. Draft PEIR, pp. 2-2, 2-3.

<sup>4</sup> National Academy of Sciences, National Research Council, Committee on Toxicants and Pathogens in Biosolids Applied to Land, “Biosolids Applied to Land: Advancing Standards and Practices.” National Academy Press, Washington, D.C. July 2002, p.4, 89-90, 143 (hereinafter, the “2002 NRC Report”).

wastewater and thus in sewage sludge. Still, land application of treated effluents and treated sludge will increase the level of toxic chemicals and pathogens in the soil. The public is concerned about pollutants and pathogens that may contaminate food crops or be transported elsewhere in the environment.<sup>5</sup>

Adoption of the Class A Only alternative will significantly reduce the public's exposure to pathogens, since Class A sewage sludge is limited to a maximum of **1,000** colony forming units of pathogens per gram, while up to **2,000,000** colony forming units of pathogens per gram is allowed in Class B sewage sludge. Interestingly, nowhere in the body of the Draft PEIR is this marked distinction between the allowed pathogen concentration in Class A vs. Class B sewage sludge discussed, except in Appendix C, pp. 4-5.

NGO2-2

A review only of the revisions to the Draft PEIR and comments made during the public workshop on March 2, 2004 leaves the impression that there is very little difference between Class A and Class B sewage sludges, when the truth is that the difference is a 2,000 fold increase in allowable pathogen concentrations. This is not reflected in the Draft PEIR analysis of the Class A Only Alternative and its proper consideration could well tilt the analysis toward the adoption of the Class A Only alternative. For similar reasons, it can be presumed the public would prefer the use of a less pathogenic material to grow the crops they consume, which would be addressed by the adoption of the Food Crop Limitation alternative as well.

**2. There are legitimate public and health safety concerns with the USEPA's risk assessment, which is the underlying basis for both the USEPA's Part 503 regulations and the SWRCB's Draft PEIR.**

Proponents argue that the USEPA carefully considered the risks associated with the land application of sewage sludge and set "safe" levels for heavy metals exposure. However, for at least one of the regulated heavy metals in sewage sludge – lead – the USEPA's assumptions have proven dramatically incorrect.

NGO2-3

In its risk assessment, the USEPA used a 300 ppm concentration limit for lead based on the assumption that a safe threshold for lead concentrations in children did exist. The USEPA more recently has determined, however, that:

[L]ead and lead compounds are highly persistent and highly bioaccumulative. The persistence of lead in the environment is not in question since, as a metal, lead cannot be destroyed in the environment.

<sup>5</sup>

National Academy of Sciences, National Research Council, Committee on the Use of Treated Municipal Wastewater Effluents and Sludge in the Production of Crops for Human Consumption, "Use of Reclaimed Water and Sludge in Food Crop Production", National Academy Press, Washington, D.C. 1996, pp.39-40 (hereafter, the "1996 NRC Report").

With respect to whether lead or lead compounds released to the environment will result in lead that is bioavailable, the data indicate that under many environmental conditions lead does become available.<sup>6</sup>

As a result, the USEPA now concludes that:

[L]ead and lead compounds have been shown to cause adverse effects at concentrations far less than the de minimis levels. For example, EPA has stated that it appears that some of the health effects of lead, particularly changes in the levels of certain blood enzymes and in aspects of children's neurobehavioral development, may occur at blood lead levels so low as to be essentially without a threshold.<sup>7</sup>

Based on this new information, the USEPA's 300 ppm lead concentration limit for sewage sludge is excessive and poses significant risks to the children of the farmers, workers and nearby communities where sewage sludge is applied. As the USEPA itself acknowledged in its Part 503 risk assessment:

[B]ecause childhood ingestion of dirt is so widespread, and the potential consequences so severe, a highly conservative limit is warranted, especially in the context of regulatory decisions that authorize a threshold pollutant such as lead to be added to the environment.<sup>8</sup>

The exposure of this erroneous assumption in the USEPA's risk assessment demonstrates why a thorough reevaluation of the Draft PEIR's reliance on the USEPA's risk assessment should be conducted for land applications of sewage sludge in California.

**3. The Draft PEIR will exacerbate these problems by permitting sewage sludge application rates far in excess of what the USEPA presumed when it developed its regulations.**

In its risk assessment, the USEPA assumed that the typical annual sludge application rate for agricultural land based on crop nutrient requirements would be 7-10 metric tons/hectare (**3 - 4.4 tons/acre**) for 100 years.<sup>9</sup> Yet, in California, annual

<sup>6</sup> Federal Register, Vol. 64, August 3, 1999 (Proposed Rules, 40 CFR Part 372), p.42231.

<sup>7</sup> Id. at 42234. Also see Federal Register, Vol. 66, January 17, 2001, p.4503 ("Long-lasting impacts on intelligence, motor control, hearing and neurobehavioral development of children have been documented at levels of lead that are not associated with clinical intoxication and were once thought to be safe." (emphasis added)).

<sup>8</sup> Risk Assessment, p.5-8.

<sup>9</sup> Federal Register, February 19, 1993, p.9317 and Leather Industries of America, Inc. v. Environmental Protection Agency, et al., 40 F.3d 392, 396 (1994)

NGO2-3

NGO2-4

applications may reach **10 - 40 dry tons/acre**.<sup>10</sup> This implies that the USEPA's assumed lifetime accumulation of sewage sludge at a particular site could be reached within 10-11 years, not 100 years. This negates claims that we need not worry about the possible harmful buildup of metals concentrations in soils at application sites, since it may take only 10 years (a very realistic time frame) for typical applications to cause the total accumulation of sewage sludge at a particular site to exceed the maximum amount the USEPA assumed would be deposited there.<sup>11</sup> Considering that farmers generally intend to continue farming for many years, and pass their farms on to their children, this is a frightening prospect that justifies the adoption of more conservative regulations and limitations on application rates.

↑  
NGO2-4

**4. The potential for adverse long-term impacts is the real danger from sewage sludge use on agricultural properties.**

The SWRCB must acknowledge and deal with the very real scientific dispute regarding the safety of sewage sludge use on agricultural lands, in particular, for long-term effects. The main problem is the lack of sufficient information about long-term consequences of sewage sludge use. As the USEPA has acknowledged:

NGO2-5  
↓

There are uncertainties concerning the long-term behavior of metals in sludge. The sludge experts that EPA relied on conclude, based on field studies, that iron oxides and manganese oxides found in sludge as a result of wastewater treatment and metal oxides naturally found in soils may form complexes with the metals and significantly reduce their bioavailability. Documentation to support these conclusions is limited. At a minimum, when the organic component of the sludge breaks down, it is possible that average concentrations of pollutants may increase or they may become more bioavailable.<sup>12</sup>

---

<sup>10</sup> Original PEIR, p.2-20. From a limited review of biosolids annual reports filed with the California Regional Water Quality Control Board, Central Valley Region, the following data was obtained for one large scale permit in Kern County, California (both dry and wet tons were reported):

2001: 30 sites used, annual application rates of 9.30 - 31.69 dry tons/acre (23.92 - 108.47 wet tons/acre)

2002: 39 sites used (for a total of 3901.98 acres, 84,923.44 dry tons applied (287,011.69 wet tons)): annual application rates of 10.81 - 48.13 dry tons/acre (34.99 - 160.39 wet tons/acre)

<sup>11</sup> In fact, the USEPA noted that typical annual sludge application rates for reclamation sites are 74 metric tons/hectare (approximately 32.5 tons/acres). Yet, in California, permissible application rates may approach 20-40 tons/acre, levels the USEPA thought necessary only for reclamation sites! Federal Register, Vol. 58, February 19, 1993, p.9317.

<sup>12</sup> Federal Register, February 19, 1993, p.9273-4 (emphasis added).

Even the NRC has acknowledged that:

Concerns have been expressed about what may happen once a site has reached its cumulative limit for metals and sludge application stops. The chemical properties of the soil will likely change over time. The availability of certain trace elements may increase and potentially cause phytotoxicity problems and/or cause greater bioaccumulation of trace elements in crops. . . .<sup>13</sup>

In conclusion, the SWRCB must keep in mind, while considering the revisions to the Draft PEIR:

Most of the agriculturally productive soils in this country are presently in use; food production cannot simply be relocated if existing farm land is degraded. Our best agricultural soils need to have their productivity and crop quality protected, not for 10, 20 or even 100 yrs, but in perpetuity. To this end, a cautious approach to the application of toxic metals in sludges to agricultural soils would be prudent.<sup>14</sup>

**B. The Draft PEIR improperly rejects the Class A Only and Food Crop Limitation alternatives primarily because of their alleged negative cumulative impacts on traffic, air quality and energy consumption.**

The Draft PEIR asserts, without any substantive evidence, that adoption of the two alternatives would result in more truck miles driven, greater fuel use and detrimental air quality impacts in the South Coast and Mojave basins.<sup>15</sup> However, the Draft PEIR provides no information regarding current or expected land application sites or the associated hauling distances from the supposedly impacted POTWs. Without this information, it is impossible to determine that truck miles will, in fact, double, fuel consumption will increase and air quality degrade.

Part of the problem is that for this Draft PEIR, unlike for the original 2001 PEIR, there appears not to have been any consultation with or information requested from other interested stakeholders (i.e., CFBF). Rather, the Draft PEIR seems to have been revised using information supplied solely by the sewage sludge proponents (i.e., CASA), who naturally oppose any efforts to increase the costs of their waste disposal efforts. Hence, it is not surprising that the focus of the Draft PEIR's analyses of the two

<sup>13</sup> 1996 NRC Report, pp.70-71 (internal citations omitted).

<sup>14</sup> T. McBride, "Toxic Metal Accumulation from Agricultural Use of Sludge: Are USEPA Regulations Protective?" Journal of Environmental Quality, vol.24, no.1, January-February 1995.

<sup>15</sup> Draft PEIR, pp. ES-14, 15 and 14-39.

NGO2-5

NGO2-6

alternatives is on the economic costs of compliance for the POTWs and the impacts on the urban areas they serve, rather than the health and safety impacts in the rural communities to which the sewage sludge is hauled and land applied, and the benefits to both rural and urban populations from the adoption of either alternative.<sup>16</sup>

Trying to determine the proper balance of risks and benefits of the two alternatives is impossible without information about the current truck miles driven, fuel used and air quality impacts on both the South Coast and Mojave basins as well as the air basins where the current land application sites are located. Especially troubling is the effort to improperly “dramatize” the supposed impacts of adopting one of the alternatives by inappropriately deleting findings previous approved by the SWRCB.

In the original, 2001 PEIR, the transportation of sewage sludge for land application purposes was described as follows:

“Much of this material is transported **a considerable distance** by truck for land application.” (emphasis added)

However, in the Draft PEIR, this sentence has been changed to read:

“Much of this material is transported by truck to agricultural areas for land application.”<sup>17</sup>

The question must be asked: what has occurred in the interim between the approval of the 2001 PEIR and the Draft PEIR that justifies the deletion of the phrase “a considerable distance?” Is there evidence to support the change or was this phrase deleted in an effort to make the supposed differences between current land application efforts and post-alternative scenarios seem more dramatic than they are really? At a minimum, this issue must be addressed and corrected.

Contrary to the conclusions drawn in the Draft PEIR, a review of the actual facts reveal the inadequate analysis conducted for the Draft PEIR and demonstrate the lack of foundation for the determination that adoption of either alternative will double truck miles, increase fuel use and degrade air quality.

<sup>16</sup> The Draft PEIR also failed to consider and analyze the ability of POTWs to pass through to their customers the costs of upgrading equipment and treatment processes to produce a Class A product. Spreading capital improvement and operation costs over potentially millions of primary urban customers produces a relatively small cost per customer for an improved, less pathogenic material. Contrast this to the significant risks and potential costs imposed on the much smaller number of rural recipients of the much more pathogenic Class B material and it becomes evident that POTW customers should be willing to pay slightly more for the continued benefit of exporting their waste disposal health and safety risks to rural communities and to minimize the exposure of the rural communities to those health and safety risks.

<sup>17</sup> Draft PEIR, p. 2-3.

1. POTWs in the South Coast basin already are trucking their Class B material through the South Coast Basin to the Central Valley and farther north, as well as Arizona and Nevada. Therefore, since neither the Class A nor the Food Crop Limitation alternatives require more total truck trips than currently required for hauling Class B sewage sludge, the number of truck trips through the South Coast basin won't change, and so neither will fuel consumption or air quality in the South Coast basin.

2. Trucking distances to Arizona or Nevada vary depending on the point of origin. For example, the distance from Riverside and San Bernardino counties to Yuma, Arizona is roughly the same as to Kings County in central California, while Yuma, Arizona is, in fact, much closer to San Diego than Kings county. Hence, the Draft PEIR's generalization that adopting either of the two alternatives will force POTWs to double the miles they haul their sewage sludge is unsubstantiated. Since the rejection of the Class A Only or Food Crop Limitation alternatives are based, in part, on this unsupported generalization, the Draft PEIR must be reopened for further investigation and analysis of current and anticipated trucking distances.

NGO2-6

3. Los Angeles County is the largest generator of sewage sludge, producing nearly 40% of the total produced in California. Los Angeles County currently is pursuing a plan to ship over 500,000 wet tons of Class B to Kings County for composting into an exceptional quality (EQ) product. Therefore, regardless of the outcome of the Draft PEIR, Los Angeles County will continue to truck the bulk of its sewage sludge through the South Coast basin to Kings County. This also means that the relevance of the Draft PEIR's allegations that truck miles will double if the Class A Only alternative is adopted are significantly reduced, if they have any relevance at all.

4. If there is any truth to the claim that adoption of either alternative will result in greater exportation of sewage sludge to Nevada and Arizona (which the Draft PEIR acknowledges is at risk due to increasing concerns of Nevada and Arizona residents and regulators<sup>18</sup>), then there could be air quality impacts for the Mojave basin. However, to the extent that sewage sludge shipments are diverted away from the Central Valley, there will be air quality improvements in the already critically impacted Central Valley, which may more than offset the impacts on the Mojave basin. The Draft PEIR fails to consider or analyze this benefit, rendering its rejection of the two alternatives faulty and suspect.

NGO2-7

5. The Class A alternative actually may result in a 75% reduction of sewage sludge volume to be hauled by truck to application sites.<sup>19</sup> Therefore, adoption of the Class A Only alternative may reduce significantly the number of truck trips, save fuel, reduce truck maintenance costs and improve air quality in the South Coast and other air

NGO2-8

<sup>18</sup> Draft PEIR, pp. 14-20, 21.

<sup>19</sup> Draft PEIR, p. 14-10.

basins. The Draft PEIR fails to consider or analyze this major benefit of the Class A Only alternative, and the fact that it may more than offset its supposed cost detriments.

6. The Draft PEIR concludes that adoption of either alternative will result in additional energy use to convert Class B to Class A.<sup>20</sup> The Draft PEIR fails, however, to include the option most frequently used to convert Class B to Class A, that of composting. The Draft PEIR's analysis of energy use must be redone to include this common, and potentially less expensive, means of meeting the Class A Only or Food Crop Limitation alternative.

NGO2-9

In addition, the Draft PEIR fails to consider and analyze that natural gas is a cleaner burning fuel than truck diesel fuel; and exhausts from stationary sources, such as plants generating the electricity used by the POTW, are subject to much stricter air pollution requirements and controls than mobile truck exhausts. Further, to the extent that the volume of sewage sludge requiring transportation may be reduced 75%, the increased natural gas and/or electricity processing costs may be more than offset by the reduction in truck fuel consumption and maintenance costs. Therefore, there are significant benefits associated with the Class A Only alternative that the Draft PEIR failed to consider or analyze, rendering its conclusion to reject the Class A Only alternative unsupportable.

NGO2-10

The bottom line is that the Draft PEIR recommends rejection of the Class A Only and Food Crop Limitation alternatives because of their supposed cumulative impacts on traffic, energy use and air quality, but failed to adequately analyze these impacts or properly consider offsetting benefits. Hence, the Draft PEIR cannot be approved and it must be revised to properly investigate and address these facts.

**C. The Draft PEIR references new information derived from recent findings by the USEPA and the NRC. A balanced review of this new information requires the SWRCB to reconsider its lax regulations of Exceptional Quality (EQ) sewage sludge.**

The Draft DEIR introduces new information/research/findings from other sources, including the 2002 NRC study.<sup>21</sup> One important thing in that study not mentioned in the Draft PEIR was the NRC's recommendations for greater regulation of EQ sewage sludge.

NGO2-11

The classification of EQ sewage sludge was not defined in the Part 503 regulations, but appeared later, in subsequently published guidance documents. The

<sup>20</sup> Draft PEIR, pp. 14-9, 13 and 21.

<sup>21</sup> Draft PEIR, pp. ES-1, ES-18, ES-19, 5-2, 16-24.

USEPA provided very little evidence in those guidance documents to support its determination that EQ sewage sludge should be exempt from most of the administrative requirements and application limitations required for non-EQ sewage sludge. The USEPA simply asserted that "EQ sewage sludge is considered to be comparable to other common fertilizer products."<sup>22</sup> With only slight modification, the Draft PEIR adopts this position. For the following reasons, CFBF disagrees with this conclusion and insists the Draft PEIR be revised to consider and address these concerns.

In contrast to the USEPA's assertions regarding the comparability of EQ sewage sludge and commercial fertilizers, CFBF notes that for bulk use, the nutrient content of commercial fertilizers, as opposed to sewage sludge, is more constant and less subject to the inherent variability resulting from differences in treatment facility processing. As the USEPA states: "[t]he chemical composition of sewage sludge may vary greatly between wastewater treatment works and also over time at a single plant."<sup>23</sup> The NRC describes the problem:

From the farmer's perspective, other factors limit agriculture use of sewage sludge. **Sewage sludge is inherently more difficult to use than chemical fertilizers.** In part, this is because the composition of plant nutrients and trace elements vary due to differences among types of sludges (e.g., different water contents or treatment processes) and differences among municipalities and their industrial contributors. The composition of commercial fertilizers are formulated to meet crop requirements.<sup>24</sup>

Further, there is very little difference between EQ and non-EQ sewage sludges. EQ and non-EQ sewage sludges are subject to the same instantaneous ceiling concentration limits for heavy metals.<sup>25</sup> The only difference between EQ and non-EQ sewage sludges are that, when calculated on a monthly average basis, the heavy metals content of EQ sewage sludges are limited to between one third to one half of the heavy metals concentrations allowed in non-EQ sewage sludges. One exception is Nickel, for which EQ and non-EQ sewage sludges have the identical pollutant limits.<sup>26</sup>

<sup>22</sup> EPA Land Application of Sewage Sludge: "A Guide for Land Appliers on the Requirements of the Federal Standards for the Use or Disposal of Sewage Sludge, 40 CFR Part 503", EPA/831-B-93-002b, December 1994, p.31.

<sup>23</sup> EPA Process Design Manual: "Land Application of Sewage Sludge and Domestic Sludge", EPA/625/R-95-001, September 1995, p.27 (also pp.32, 72).

<sup>24</sup> 1996 NRC Report, p.35 (emphasis added). This finding also mitigates the assertion in the Draft PEIR that adoption of the two alternatives would reduce biosolids use in California, forcing greater use of fertilizers and increased traffic to deliver the fertilizers. Draft PEIR, p.14-36. In general, biosolids do not provide the complete nutrient needs of crops and spot fertilizer applications are often necessary. Further, fertilizers are applied in pounds/acre, not tons per acre like sewage sludge, and, therefore, fertilizer delivery traffic would increase little, if any, and would be more than offset by the substantial reduction in biosolids hauling truck traffic.

<sup>25</sup> 40 CFR 503.13 (table 1); Draft PEIR, Table 2-3.

<sup>26</sup> 40 CFR 503.13 (table 3).

Hence, there is no substantive justification for permitting the unregulated use of EQ sewage sludge for bulk land application purposes and, therefore, EQ sewage sludge should not be exempt from regulation. As the NRC determined when it revisited this issue in its updated 2002 study, "**exemptions from nutrient management and site restrictions for land application of bulk EQ biosolids should be eliminated.**"<sup>27</sup> The Draft PEIR should be revised accordingly to eliminate the EQ exemptions.

↑  
NGO2-11

D. **Conclusion.**

As currently written, the Draft PEIR cannot be adopted. The failure to consider and analyze all relevant impacts and benefits of the Class A Only and Food Crop Limitation alternatives, combined with the uncertainty surrounding potential long-term impacts of the land application of sewage sludge and recent recommendations to regulate EQ sewage sludge, demonstrates that the Draft PEIR must be reconsidered to incorporate, consider and properly analyze these additional impacts and benefits.

NGO2-12

Sincerely,

RONALD LIEBERT

G:\WP60\RON\SLUDGE\3-15-04 SWRCB Draft PEIR comments.doc

---

<sup>27</sup> 2002 NRC Report, p.72 (emphasis added).

## California Farm Bureau Federation

**Comment NGO 2-1:** The commenter takes the position that the effect of the U.S. EPA Part 503 regulations is to transfer any risks associated with beneficial land application from urban populations to farm communities.

Response: Existing studies and risk assessments do not indicate that rural populations or farm communities experience any elevated level of health risk associated with the beneficial land application of biosolids (see the draft PEIR, pages 5-10 to 5-11, 5-18 to 5-24, 5-33 to 5-37, 5-43 to 5-47, and Appendix E, Part 2.) Further, to the extent that there is any risk associated with the consumption of farm produce grown with or near the land application of biosolids, that risk would be equally or even excessively borne by urban populations who purchase and consume it. Likewise, to the extent that there is any risk associated with the transport of biosolids to application sites, those risks are also equally borne by urban and rural populations who live in areas through which the biosolids are transported.

On the issue of the general acceptance of health risk, see the Response to Comment NGO 3-2.

**Comment NGO 2-2:** The commenter points out that the land application of biosolids will increase the level of toxic chemicals and pollutants in the soils of land application sites. Adoption of the Class A Only Alternative will significantly reduce exposure to pathogens in comparison to Class B biosolids. The EIR does not sufficiently differentiate between the levels of pathogens in Class A and Class B biosolids.

Response: The revised PEIR clearly identifies the differences between Class A and Class B biosolids with regards to allowable levels of viable pathogens. For example, the discussion under “Discharge Specifications” beginning on page 2-6 discusses the additional requirements for land application of Class B biosolids that do not apply to Class A biosolids. The discussion of the Class A Only Alternative beginning on page 14-5 also differentiates between Class A and Class B biosolids with regard to the level of treatment required to meet Class A standards.

See also the Response to Comment L2-14.

**Comment NGO 2-3:** The commenter states that there are legitimate public health and safety concerns with the U.S. EPA risk assessment that underlies both the Part 503 regulations and the proposed GO. The commenter alleges that changes in the U.S. EPA’s general risk assessment of lead in the environment should trigger a thorough examination of the PEIR’s reliance on the U.S. EPA’s risk assessment for biosolids.

Response: The proposed GO would impose a lower ceiling for lead content in biosolids than is permitted under the Part 503 regulations. As a result, it would be more protective of the public health and safety than the Part 503 regulations alone.

The Part 503 regulations have been duly adopted by the U.S. EPA. In addition, in its report on the Part 503 regulations entitled *Biosolids Applied to Land: Advancing Standards and Practices*, the NRC concluded that, while additional study needs to be undertaken to update the scientific basis of the rule, “[t]here is no documented scientific evidence that the Part 503 rule has failed to protect public health.” The Board has chosen to use those regulations as the basis for the proposed GO. A re-examination of the risk analysis prepared for Part 503 is beyond the scope of this PEIR.

Part 503 revisions are subject to change and, as revisions occur, those revisions would become part of the regulatory scheme underlying the proposed GO. The U.S. EPA is currently implementing its final action plan to respond to the NRC’s *Biosolids Applied to Land* recommendations. As part of that plan, it has identified several short-term projects that it intends to complete in fiscal year 2004–2005. Project 4 of this action plan includes a study of the fate of contaminants in the soil to which biosolids are applied and their effects on the soil. This will help U.S. EPA determine whether revisions to the Part 503 regulations are warranted.

See also Master Response #1.

**Comment NGO 2-4:** The commenter expresses concern that typical land application rates for biosolids in California (in tons/acre) exceed the application rate assumed by the U.S. EPA in its risk assessment, and that this will lead to a harmful buildup of metals concentrations in application site soils.

Response: The U.S. EPA Part 503 and SWRCB GO regulations do not regulate the total tonnage of applied biosolids per acre, but the cumulative pollutant loading rates. Application of biosolids in excess of these rates is prohibited. If these rates are reached in ten years at a given site, no further application of biosolids can be made. See the response to the following comment for a more detailed explanation.

**Comment NGO 2-5:** The commenter raises the concern that land application of biosolids could result in long-term effects. Specifically, metals may accumulate in the soil from cumulative applications of biosolids, soil characteristics may change over time enabling a greater than expected bioavailability, and this may degrade the productivity of those lands to which the biosolids have been applied.

Response: The proposed GO would establish limits on cumulative application of biosolids that exceed the federal requirements cited by the commenter. Prohibition 12 of the proposed GO would restrict the allowable metal concentrations in biosolids to be applied to land to not more than those established under Part 503 for most metals. In the case of allowable lead and mercury concentrations, the proposed GO would establish standards that are substantially more restrictive than federal regulations. Discharge Specification 4 of the proposed GO would prohibit applying biosolids in amounts that would exceed the “Background Cumulative Adjusted Loading Rate.” This rate is calculated as the Part 503 cumulative pollutant-loading rate, minus the site’s actual background site soil concentration of the pollutant. As a result, where pollutants are present in the soil, the allowable loading rate would be less than that which would

otherwise be allowed under Part 503. The monitoring and reporting of cumulative application would be required as a condition of applying the proposed GO.

Once the application of biosolids has reached the Background Cumulative Adjusted Loading Rate, no additional application would be allowed. This will avoid harmful contamination of the agricultural lands.

The requirement for monitoring the cumulative concentrations of pollutants will enable the RWQCBs to ensure that qualifying land application activities will not result in long-term soil contamination. The proposed Background Cumulative Adjusted Loading Rate, by taking into account the site's actual soil concentrations of pollutants, will identify those situations where pollutants have become more bioavailable over time.

**Comment NGO 2-6:** The commenter states that the PEIR lacks substantive evidence that adoption of either of the Class A Only or the Food Crop Limitation alternatives would result in more truck miles driven, greater fuel use, and detrimental air quality impacts in the South Coast and Mojave air basins. The commenter objects to the lack of consultation with other interested stakeholders and the use of information from proponents of the use of biosolids. The commenter also objects to the removal of the phrase, "a considerable distance" from the discussion of truck transport of biosolids from producers to land application sites.

More specifically, the commenter contends that POTWs already truck their Class B material through the South Coast air basin en route to land application sites, so therefore, the travel through the basin will not change.

Also, trucking distances to Arizona and Nevada vary depending on the point of origin. The commenter notes that in some cases, Arizona is closer to generators than is the Central Valley.

The commenter offers that Los Angeles County, the largest producer of biosolids, is pursuing a plan to ship large quantities of Class B biosolids to Kings County for treatment. This would indicate that the quantities which may be transported out of state would be less than estimated in the Class A Alternative discussion.

Response: See Master Response #6 relative to clarifications that have been made to the traffic analysis for the Class A Only Alternative.

CEQA does not require a lead agency to consult with stakeholders when preparing an EIR or, as in this case, revising an EIR. The Board has made the revised draft PEIR available to an extensive list of interested agencies, groups, and individuals for their review and comment. Pursuant to Public Resources Code Section 21082.1, any person may submit information to a lead agency for its consideration. The Board, through its staff, subjected all such submittals to its independent judgment before releasing the draft revised PEIR for public review.

The phrase "a considerable distance" was replaced by a reference to delivery "to agricultural areas" for editorial purposes. The change was intended to convey the fact

that most biosolids are being transported from generators in urban areas to application sites in agricultural areas. The prior language simply stated that biosolids were being taken away a considerable distance, but did not disclose that the receiving areas were agricultural lands. The revision gives a more accurate description of the general origin and end of biosolids transport.

The analyses of traffic and air quality impacts in the Class A Only Alternative portion of Chapter 14 have been clarified. The air quality analysis prorates the impact within the South Coast basin to account for in-basin trips.

The Class A Only Alternative traffic analysis in Chapter 14 has been revised to clarify that given the general nature of this project and the numerous independent variables that affect a POTW's decision regarding where biosolids might be taken for land application, that a quantitative traffic analysis would be speculative. Instead, general conclusions are drawn from the current activities of two major southern California biosolids generators: the County Sanitation Districts of Los Angeles County and the Orange County Sanitation District. These two entities truck biosolids from POTWs along the western side of Los Angeles and Orange Counties to sites in Arizona that are estimated to be about 320 miles from those points of origin.

Kings County approved a conditional use permit in April 2004 for a composting facility that would process up to 500,000 tons of biosolids produced by the County Sanitation Districts of Los Angeles County. The traffic impact discussion for the Class A Only Alternative has been revised to disclose this prospective operation. While this approval indicates that in-state land application options are available, it does not mean that other POTWs will not continue to transport biosolids to out-of-state application sites. In addition, it indicates that traffic between southern California producers and San Joaquin Valley land application sites will continue.

The continued use of southern San Joaquin Valley sites is also indicated in the revised Table 2-1 that includes information from the 2003 annual reports submitted to the U.S. EPA by biosolids generators.

**Comment NGO 2-7:** The commenter states that if, as a result of either the Class A Only or the Food Crop Limitation alternatives, more biosolids are transported out of state, then air quality in the San Joaquin Valley will benefit. The commenter believes that the PEIR must consider or analyze this benefit, which "may more than offset the impacts on the Mojave basin."

**Response:** The discussion of air quality impacts under these two alternatives in Chapter 14 has been expanded to clarify the analysis. As noted in the revised analysis, substantial amounts of biosolids continue to be delivered to the San Joaquin Valley, in compliance with local ordinances. In some cases, this consists of Class A or EQ biosolids that are being delivered for land application, in others Class B biosolids are being delivered to composting facilities where they are transformed to EQ compost for use nearby. While there may be a reduction in biosolids-related truck traffic in the San Joaquin Valley and a commensurate reduction in the level of prior air emissions, the continued delivery of biosolids to the area will nonetheless contribute emissions within the San Joaquin air

basin. This is particularly the case for composting operations that also require the truck delivery of bulking materials from elsewhere.

The PEIR's emphasis on the project's adverse effects is not mistaken. Section 15126.2 of the State CEQA Guidelines states that an EIR "shall identify and focus on the significant effects of the proposed project." CEQA defines "significant effect" as "a substantial, or potentially substantial, adverse change in the environment" (Public Resources Code Section 21068).

**Comment NGO 2-8:** The commenter refers to the stated 75% volume reduction resulting from the heat drying treatment for Class A biosolids as significantly reducing the number of truck trips, and that the revised draft PEIR failed to consider this major benefit.

Response: Some types of Class A treatment do result in a reduction of overall volume relative to Class B biosolids. However, that is not always the case. The volume reduction is a function of the dryness of the treated biosolids. Because the type of treatment and therefore level of dryness cannot be accurately predicted across the state and across numerous POTWs, the overall amount of volume reduction is unknown. Further, one common type of Class A treatment actually increases the volume of the resultant biosolids substantially. Composting adds substantial amounts of bulking material to the initial biosolids that results in an increased volume of Class A biosolids relative to Class B. Therefore, it cannot be assumed that increased levels of Class A treatment would necessarily lead to a substantial decrease in the volume of biosolids to be land applied.

The traffic analysis is intended to be a general, qualitative analysis. Greater detail is not possible, given the general nature of the proposed GO. The Class A Only Alternative's traffic analysis has been revised to clarify this point. See also Master Responses #2 and #6.

**Comment NGO 2-9:** The commenter requests that the PEIR's analysis of energy use related to the conversion of Class B biosolids to Class A biosolids be redone to consider the energy cost of composting.

Response: Composting involves the mixing of Class B biosolids with woodchips or other organic bulking material in order to create a product that is free of pathogens and that can be used as a soil amendment. The heat created by the decomposition of the composting materials is maintained as a high level for a prescribed period of time in order to kill any pathogens that may have been present in the original Class B biosolid. The composting materials must be periodically mixed in order to ensure proper biological action occurs throughout the composting pile.

Composting, while simple in concept, nonetheless requires substantial amounts of energy in addition to that employed in Class B treatment alone. Where composting is undertaken in the open air (primarily in rural areas and outside the South Coast Air Quality Management District), energy in the form of fuel is expended in delivering the biosolids to the composting site, delivering organic matter to mix with the biosolids

(bulking materials), and operating the heavy machinery to move and mix the composting piles and windrows.

In the South Coast air basin, which encompasses Orange and major portions of Los Angeles, Riverside, and San Bernardino Counties, the Air Quality Management District (AQMD) enacted Rule 1133.2 in January 2003 requiring that existing composting facilities reduce their volatile organic compound (VOC) and ammonia emissions by 70 percent by 2009. At the time, studies by the AQMD showed that biosolids composting facilities within the South Coast air basin emitted approximately 1.7 tons of VOC and 2.7 tons of ammonia per day. Under this rule, new composting facilities will be required to be enclosed and use a forced-air aeration system for the curing part of the operation. All air exhausted by the facility is required to pass through an emission control system.

The energy cost of operating an enclosed composting facility is substantially greater than Class B treatment alone. In addition to the machinery needed for moving and mixing composting material and the transport of bulking materials from elsewhere, the forced-air aeration and air emission control systems will also use energy.

**Comment NGO 2-10:** The commenter states that the draft PEIR has failed to analyze significant air quality benefits associated with the Class A Only Alternative arising from the use of natural gas and the addition of stationary sources (which are subject to stricter air pollution requirements than trucks) relating to Class A treatment.

Response: Class A treatment involves stationary sources of heat and energy, as described in Chapter 14. Stationary sources are subject to air pollution controls that are stricter than those applicable to trucks. Because of the strict controls on stationary sources within the state's non-attainment areas, Class A treatment is not expected to result in a net increase in air pollution. However, increasing the level of Class A treatment would not eliminate the necessity to transport Class A biosolids to land application sites or substantially reduce the air pollution expected to result from those truck trips. This could include sites in the San Joaquin Valley, to the extent that the Class A or EQ biosolids meet local ordinances, as well as sites elsewhere in the state that are currently accepting Class B biosolids such as Solano County. In addition, longer truck trips would be made to sites that are out of state, as is currently happening in Southern California in response to local prohibitions on the land application of Class B biosolids. The discussions of traffic and air quality impacts associated with the Class A Only Alternative in Chapter 14 have been expanded to clarify these impacts.

**Comment NGO 2-11:** The commenter states that the draft PEIR should mention the NRC's recommendations for greater regulation of EQ biosolids by the U.S. EPA. The commenter opines that there is little difference between EQ and non-EQ biosolids relative to "ceiling concentration limits for heavy metals" and states that "there is no substantive justification for permitting the unregulated use of EQ sewage sludge for bulk land application purposes and, therefore, EQ sewage sludge should not be exempt from regulation."

Response: At the request of the U.S. EPA (as part of U.S. EPA's ongoing effort to periodically reassess the Part 503 rule), the NRC independently reviewed the technical

basis of the pathogen and chemical regulations for biosolids. Among the recommendations made by the NRC in its July 2002 report *Biosolids Applied to Land: Advancing Standards and Practices* was the following: “Exemptions from nutrient management and site restrictions for land application of bulk EQ biosolids should be eliminated.”

The purpose in mentioning the NRC report in the revised PEIR was not to provide a detailed summary of the report’s contents. That is outside the scope of the project being analyzed here. Rather, it was to bring the report to the reader’s attention and highlight its recommendations.

Under the Part 503 regulations, U.S. EPA allows the application of EQ biosolids without restrictions. This is because, as described in Chapter 2 of the revised PEIR, EQ biosolids are subject to the most stringent treatment requirements of all biosolids. Because of this level of treatment, U.S. EPA allows the sale of EQ biosolids for home garden use. A number of local agencies, including Kern and Fresno Counties, have imposed limitations on the land application of all biosolids except EQ. As a result, some POTWs have chosen to treat their biosolids to EQ standard and apply them to land in bulk.

The commenter mischaracterizes the proposed GO. It would not permit the unregulated use of EQ biosolids for bulk land application. To the contrary, the proposed GO would apply standards to the land application of EQ biosolids that are substantially stricter than federal requirements. Findings 1a and 1b of the proposed GO apply its provisions to EQ mixtures of more than 50% biosolids applied at more than 10 dry tons per acre per year and mixtures of less than 50% biosolids applied at more than 20 dry tons per acre per year, respectively, on plots greater than 20 acres in area. All of the discharge prohibitions and specifications described in the proposed GO would apply to qualifying EQ use. This includes discharge specification B.4 that establishes “Risk Assessment Acceptable Soil Concentration” limits for metals in order to control cumulative pollutant loading.

**Comment NGO 2-12:** The commenter expresses the viewpoint in the introduction and conclusion of the comment letter that the revised draft PEIR fails to sufficiently consider and analyze all relevant impacts and benefits associated with the Class A Only and Food Crop Limitation Alternatives, and that the PEIR cannot be adopted until the deficiencies of the analysis have been properly reconsidered. Further, the commenter states that the revised draft PEIR’s conclusion that the Class A Only and Food Crop Limitation Alternatives would not be more protective of the public health and safety are not supportable.

Response: In the comment letter, issues concerning the relevant impacts and benefits associated with the Class A Only and Food Crop Limitation Alternatives, as viewed by the commenter, were presented. Analysis and reconsideration of the issues has been conducted and is detailed in the above responses to comments. Additional relevant analysis and reconsideration may be found in Master Responses #3 and #4.

The PEIR acknowledges that public health benefits would be associated with the Class A Only and Food Crop Limitation Alternatives if the requirements of U.S. EPA Part 503 regulations, the SWRCB GO regulations, and the mitigation measures identified in the

PEIR were not implemented. In such a circumstance, the Class A Only and Food Crop Limitation Alternatives would be more protective of the public health and safety. The PEIR concludes that given the implementation of the U.S. EPA Part 503 regulations, the SWRCB GO regulations, and the mitigation measures identified in the PEIR, which constitute the Modified GO Alternative, that all three alternatives would be **equally** protective of public health and safety with respect to the land application of biosolids. The distinction made in selecting the Environmentally Superior Alternative is therefore based on a comparative analysis of truck traffic, air quality, and energy use impacts. These impacts are not considered to be equal given the circumstances existing up through 2003, as detailed in Master Response #6.

Mr. Wayne Verrill  
Management Practices Support Unit  
Division of Water Quality  
State Water Resources Control Board  
P.O. Box 100  
Sacramento, CA 95812

Subject: **Comments on the “Draft Site Specific EIR Covering General Waste Discharge Requirements for the Proposed Land Application”**

Whether it be fresh lettuce, celery, broccoli, cabbage or other leafy vegetables in the winter months or cantaloupes, watermelons or other cucurbits in the spring summer and fall...be it a root crop such as carrots or onions or a vine crop like tomatoes and peppers the issue of food safety (both real and perceived) is of paramount concern and importance to the consumer, the shipper, the grower and every individual in the marketing chain. Western Growers is extremely concerned that buyers have not demonstrated any acceptance for or exhibited any commitment to the purchase of produce grown in areas where sewage sludge is land applied. In fact we have seen, as evidenced by correspondence from buyers to shippers on this topic, that the land application of sludge in agricultural areas may generate a permanent negative impression for buyers that would prevent them from sourcing products from that area.

P.O. Box 2130, Newport Beach CA 92658  
17620 Fitch Street, Irvine CA 92614  
Phone: 949 863 1000 Fax: 949 863 9028

in terms of minimizing the potential for microbial contamination in the production and shipping of fresh fruits and vegetables. These guidelines are the foundation of United States Food and Drug Administration guidance documents which are used broadly throughout the international produce industry. Producers use them to design and develop food safety systems that will minimize the potential for microbial contamination and buyers (both domestic and international) require that these systems be audited by an outside third party to certify their compliance with the GAP's as a condition of sale. The GAP's list biosolids/sewage sludge as a primary consideration when evaluating the potential for microbial contamination.

While there may be countless assurances on the relative safety of sludge it is the ultimate consumer who will determine the risk/benefit of land application by either purchasing or avoiding products produced with or in proximity to sludge. Western Growers remains convinced that the buying community remains apprehensive regarding the purchase of these products from areas that have been treated with sludge. We are further convinced that the allowance of the use of sludge in any area where fruits and vegetables are grown puts that area in jeopardy and at a distinct competitive advantage with areas that do not allow the use of the same materials.

#### Concerns with the EIR

Current United States Environmental Protection Agency (USEPA) and California State Water Resources Control Board (CASWRCB) regulations, which govern the land application of sewage sludge, are not protective of human health, agricultural productivity, and ecological health or water resources. The EPA program, which the SWRCB has used as the foundation for the proposed General Order is terribly flawed and risky as confirmed by both the Office of the Inspector General and the National Academy of Sciences.

The EPA Office of the Inspector General (OIG) stated that "EPA cannot assure the public that current land application practices (of sewage sludge) are protective of human health and the environment", and raised the following concerns with the EPA rule:

- There are "uncertainties" in the science underlying the risk assessment previously conducted on the sludge rule, "related to human health, human exposure pathways, plant toxicity and uptake, effects on wildlife and ground water impacts."
- The sludge rule was based on "limited documentation" regarding the "long term behavior of metals in sludge."
- Methods used for determining the pathogen standards in sludge were "questionable."

NGO3-1

It is of great concern to WG that the USEPA regulations are based in part on a “willingness to accept some health risk to support the reuse of sludge” and that the California State Water Resources Control Board acknowledges that this acceptance of risk is appropriate in their Final Environmental Impact Report (FEIR) on the General Order (regulating sludge applications in California). It is particularly disconcerting that in conjunction with the acceptance of this risk the safety factors are correspondingly being reduced as EPA moves from the originally proposed conventional limit of 1 in 1,000,000 to 1 in 10,000. This is a hundred fold decrease in the safety factor.

NGO3-2

Sewage sludge is a complex mixture that routinely contains pollutants from household, commercial and industrial waste waters with organic contaminants (such as pharmaceuticals), inorganic contaminants (metals and trace elements) and pathogens (bacteria, viruses, fungi and parasites). The quality and content of sewage sludge is not consistently evaluated and there is no independent testing, monitoring or effective oversight of either the sewage sludge or the generators by government. This includes an extensive list of compounds that are not tested for that may impair the viability of agricultural soils, crop production and human health. Many of these substances have been measured in groundwater. There is ample evidence that the contaminants in sewage sludge will very likely pollute groundwater and there is no evidence that EPA's 503 Sludge Rule or the SWRCB regulations will protect our soils or groundwater from degradation by sewage sludge.

NGO3-3

Agriculture wants to know why “If the disposal of sewage sludge to ocean sites is no longer considered safe, why we would encourage it’s disposal over other important natural resources such as farmland and groundwater?” We believe there are no benefits from the land application of sewage sludge which justify the risks to our groundwater and other resources.

NGO3-4

We would reiterate, the comment in the EPA Office of the Inspector General 2002 report, which stated the “EPA cannot assure the public that current land application practices (of sewage sludge) are protective of human health and the environment” and we would strongly encourage the CASWRCB to work with the agricultural community and others to revise the EIR accordingly.

Respectfully,  
Hank Giclas, Vice President  
Strategic Planning, Science and Technology

## Western Growers

**Comment NGO 3-1:** The commenter describes the Western Growers association of 3000 members as accounting for over half of all U.S. fruit and vegetable production, and \$15 billion worth of annual production in California. Western Growers expresses concern that produce buyers have not demonstrated any acceptance for or commitment to purchasing produce grown in areas to which biosolids have been land applied. The commenter further discusses Good Agricultural Practices guidelines developed and employed by Western Growers members and others.

The commenter states the belief that U.S. EPA and SWRCB regulations pertaining to the land application of biosolids for beneficial use are not protective of human health, agricultural productivity, ecological health, or water resources. The commenter refers to reports by the NAS and U.S. EPA OIG in support of this position.

Response: The SWRCB notes the concerns expressed by the Western Growers association. Absolutely no provisions of the SWRCB GO require any member of the Western Growers to land apply biosolids to any food crops, nor to violate any Good Agricultural Practices guidelines. The most recent 2003 data in Table 2.2b of the final PEIR shows that only about 7% of all land applied biosolids are applied to food crops in California. No state within the U.S. bans the application of biosolids to food crops. Further, the land application of biosolids to agricultural lands producing food crops is a common practice in many areas of the world that also import food crops to the U.S. Therefore, with respect to the use of biosolids in the production of food crops, Western Growers members are at no marketing disadvantage with respect to any other agricultural region in the U.S. or the world.

See Response to Comment NGO1-1 for a discussion of the stated conclusions of the OIG report. See Master Response #1 for other conclusions reached by both the NAS and OIG reports.

**Comment NGO 3-2:** The commenter expresses concern over the stated “willingness to accept some health risk to support the reuse of sludge”. The commenter also expresses concern over the U.S. EPA method of risk assessment.

Response: The PEIR concludes that there is no significant health risk associated with the land application of biosolids. For more detail, see Master Response #1.

The SWRCB notes the commenter’s stated concern over the U.S. EPA method of biosolids risk assessment. For a detailed discussion of this method of risk assessment, see the draft PEIR, page 5-39, and Appendix E, Part 2. Also see Master Response #1.

**Comment NGO 3-3:** The commenter states that there is no evidence that the U.S. EPA 503 Rule or the proposed SWRCB GO regulations will protect soils or groundwater from degradation, nor the viability of agricultural soils, crop production, and human health. Further, the commenter states that there is no consistent evaluation and independent

testing, monitoring, or effective oversight by government of biosolids and biosolids generators.

Response: See Master Response #1 for comprehensive issues concerning the safety of land application of biosolids. The GO contains detailed testing and monitoring requirements to be overseen by the RWQCBs.

**Comment NGO 3-4:** The commenter wants to know, if ocean disposal of biosolids is no longer considered safe, why encourage disposal over farmland and groundwater? The commenter states the belief that there are no justified benefits to land application.

Response: There are substantial benefits to land application that counterbalance risks: use of natural slow-release fertilizer as an alternative to quick-release chemical fertilizers, improvement of soil quality and water-retention capacity from input of organic matter, recycling of human waste products, and addition to terrestrial carbon storage to reduce atmospheric carbon build-up. (See also GO Finding #7.) Further, the soil is nature's self-cleansing environment for natural terrestrial waste:

Introduced organisms usually cannot persist in the highly competitive, diverse, multi-organism associations that exist within the many habitats and niches within the soil. These are responsible for the soil self-cleansing that provides self-protection against the many plant and animal pathogens introduced to this milieu by both natural and anthropogenic means (Sumner 2000).

## NGO-4

The Solano County Citizens against B!S! has the following comments about the EIR covering General Waste Discharge of Biosolids Land Application:

We are concerned especially about (1) surface and ground water pollution (2) air pollution via aerosols and by truck transport traffic (3) local factors, such as wind (4) lack of data about effect on public health (5) lack of documentation and (6) lack of posting of application and date of application with no trespassing signs.

(1) Surface and ground water pollution: Certain areas have heavy rain and high water tables/wetlands with drainage into protected areas such as the Delta, Suisun Marsh and San Francisco and other bays . We spend money to study these areas and say they are contaminated...BUT we don't do simple things to reduce pollution. We talk about the problem and how much it will cost. Why not look at the sources and do what we can to prevent it? Water should be confined to the fields by adequate ditching designed by an engineer and accumulated water could be used for irrigation BUT it should not be allowed to run onto the roadways and into creeks.

NGO4-1

(2) Air pollution occurs both with aerosols and with truck transport- should not, at least, the latter be measured?

NGO4-2

(3) Local factors, such as wind, should be monitored and standards set. For example, a wind of 20mph over a 30 minute period is likely to disperse aerosols and these may cause allergic symptoms and, maybe, infections. Should not spreading be stopped at this point?

NGO4-3

(4) The EIR states there is no effect on public health and no mitigation is required RATHER than stating that there is not adequate information available and the number 1 research requested by a stakeholder/EPA/WERF conference, in July 2003. was research regarding effect on public health.

NGO4-4

(5) There is lack of documentation at many levels of the process. Specific statements should be made about where this is required; eg. the date animals were allowed on the fields.

NGO4-5

(6) There is no posting that biosolids have been applied; dates are not given and NO TRESPASSING signage is not applied. Date of prior application is not documented (should not be done more than 2X in 5 years).

NGO4-6

We note that the statement is made that if the water table is less than 20 feet, biosolids should not be applied. Also it is stated that fields where risk of ground water contamination is increased, sampling wells should be drilled and sampling done. More detail would be helpful in determining these "at risk" areas and the frequency of testing, etc.

NGO4-7

We do feel the "modified" GO is an improvement and look forward to more definitive direction at the state level.

Sincerely,

Lorraine McGee, M.D. on behalf of Solano County Citizens against B!S!

## **Solano County Citizens Against B!S!**

**Comment NGO 4-1:** The commenter expresses concern over pollution of specific protected areas with high water tables and wetlands. The commenter opines that water should not be allowed to run off biosolids application sites into creeks and onto roadways.

Response: Finding #18 of the GO specifies certain areas of the State as unique and valuable public resources and as jurisdictional waters or preserves. The GO is explicitly not applicable to the specified areas. All the areas specified by the commenter are included on the biosolids application exclusion list.

GO prohibitions on the discharge of biosolids into surface waters and restrictions on runoff from application sites, as well establishment of application setbacks from water bodies, include regulations A6, A7, A13, A15, A16, B5 - B9, and C5 – C8. GO regulations intended to prevent accidental spillage onto roadways include C11 – C13.

**Comment NGO 4-2:** The commenter questions if air pollution from truck transport should be measured.

Response: The potential for increased truck traffic and resulting increased air pollution is a major factor considered in the PEIR and Alternatives analysis. See Chapters 9, 10, and 14 of the draft PEIR and Master Response #6 in the final PEIR.

**Comment NGO 4-3:** The commenter expresses concern that wind-dispersed aerosols from biosolids application sites could result in adverse health affects.

Response: Research on the possibility of public health impacts arising from wind-blown dispersal of biosolids aerosols is discussed in Chapter 5 of the draft PEIR, pages 20-21 and 43-46. No reported cases of air-borne transmission of disease from biosolids have been documented in California, especially among applicators of biosolids to land. See also the Response to Comment L3-1. Nevertheless, the GO order includes several regulations intended reduce any risk of any wind-blown dispersal of biosolids aerosols.

**Comment NGO 4-4:** The commenter expresses concern that the draft PEIR states that the land application of biosolids has no effect on public health rather than stating that adequate information is not available.

Response: See Master Response #1.

**Comment NGO 4-5:** The commenter expresses concern over the lack of documentation, specifically with regard to the date that animals are allowed to graze after biosolids application.

Response: GO Regulation B8b1(c) specifies that animals cannot be grazed for thirty days on a field after Class B biosolids have been applied. GO Regulation D18 requires that the discharger shall retain records of all monitoring information, all required reports, and all data used to complete the application for the GO.

**Comment NGO 4-6:** The commenter expresses concern over the lack of specification for posting of land to which biosolids have been applied, and the date of prior application.

Response: GO Regulation B8b(2)(a) specifies that public access to biosolids application sites is to be restricted for 12 months for sites with a high potential for public exposure. GO Regulation D9 states that individuals and companies responsible for site operations retain primary responsibility for compliance with these requirements, and that individual owners of the real property at which the discharge will occur are ultimately responsible for ensuring compliance with these requirements.

Requirements for documentation are stated in Response to Comment NGO 4-5.

**Comment NGO 4-7:** The commenter makes a statement that biosolids should not be applied where the groundwater table is less than 20 feet deep, and where the risk of groundwater contamination is increased, sampling wells should be drilled.

Response: Groundwater monitoring requirements are stated in the Pre-Application Report as at a minimum requiring the installation of three monitoring wells where the minimum depth to usable groundwater is less than 25 feet.